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William Carter Stubbs

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SECOND SERIES, NO. 68.

BULLETIN

—OF THE—

AGRICULTURAL EXPERIMENT STATION

WM. C. STUBBS, PH. D., Director and State Chemist.

**Report of the Horticultural Department of State Experiment
Stations.**

HOME-GROWN VS. PURCHASED SEED

By WM. C. STUBBS, F. H. BURNETTE, EUGENE WATSON.

**ISSUED BY THE LOUISIANA STATE BOARD OF AGRICULTURE AND
IMMIGRATION,**

J. G. LEE, COMMISSIONER.

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LOUISIANA STATE UNIVERSITY AND AGRICULTURAL
AND MECHANICAL COLLEGE,

Office of Experiment Station,
Baton Rouge, La.

**Major J. G. Lee, Commissioner of Agriculture and Immigration,
Baton Rouge, La.:**

DEAR SIR—I hand you herewith results of experiments conducted in the Horticultural Departments of the three stations, with home grown versus Northern grown seed. Also results with various kinds of fruits are given. I ask that this be published as Bulletin No. —.

Respectfully submitted,

WM. C. STUBBS, DIRECTOR.

Horticultural Department.

For the past four years the efforts of the Horticultural Departments of the three stations have been directed towards the solution of the very important problem, whether home grown seed are not as good, if not better, than Northern grown seed.

It is well known that there are but few seed farms in the South. It is also known that most of our Southern seed houses sell Northern raised seed. In fact, some of these houses are publicly proclaiming the superiority of Northern grown seeds. It was once a prevalent opinion that only Irish potatoes raised in Maine could be successfully grown in the South. This opinion has been refuted by hundreds of accurately conducted experiments, and yet a few of our seedsmen still advertise Maine potatoes as the only ones fit for planting in the South, and so credulous are some farmers, that they will often pay several dollars per barrel for these, over the Southern grown, or even the Western grown potatoes. The tribute that the South is now paying to the North in the annual purchase of garden seed is enormous and should stop, provided it can be demonstrated that Southern grown seed are as good, if not better, than those grown in the North. So common is the custom of buying most all kinds of garden seed in the South, that even the country merchants everywhere lay in a regular supply every season of Northern grown seed, for the benefit of their patrons. The custom prevails doubtless from the excellence and cheapness of the seed purchased. But few farmers or their wives will take the trouble of saving the seed from every crop in the garden as it matures, when for a few dollars each year they can buy at the nearest store enough seed to supply all their wants. But a few dollars from each farmer a year, count up in the aggregate to millions of dollars, which annually goes from the South to the North for seed, which could be retained at home. Again, the Northern seedsmen are constantly selecting their seed, introducing new and improved varieties, curing them with great care, and assorting and packing them for market in a most attractive manner. The average farmer will not take the care in selecting his seed, in curing them or in preserving them for the next season, and hence the tendency has been to gradually be attracted to the bought seed and away from any attempt at saving at all. The custom of buying garden seed has become so universal, that the opinion prevails almost everywhere that Southern grown seed are generally inferior and not worth saving. To controvert this generally accepted opinion has been the object in view in conducting these experiments, the results of which are given in this bulletin. If one will take the trouble to visit the few remaining settlers who came to Louisiana in

the early thirties, or forties, he will find on inquiry that it was the universal custom of every farmer in those early days to save all of his garden seed yearly. He will further learn that they had then excellent gardens, lasting through the entire summer well into fall. There are but few vegetables whose seed cannot be properly grown, cured and preserved here, if due care be exercised, and it will be found, it is believed, that as a rule, they will be better adapted to our environment, lasting longer in bearing, and prove more productive than those grown elsewhere. It requires, of course, a great deal of care and attention, especially in rainy seasons, to dry and cure the seed properly. It also requires intelligence to destroy the weevils and other insects that prey heavily upon these seed, but it can be done, and when done it is believed a reward for this intelligent care will be found in the increased productions of the seed. It is not intended to convey the idea that at the end of one season the seed will have been properly acclimated, but it is expected that, by growing carefully year after year well selected seed, they will become thoroughly acclimated and possess pre-eminent merits for the climate. If a few enterprising Southern men who thoroughly understand the doctrine of selection and the best methods of curing and handling seeds, would establish large seed farms throughout the South, it is believed that in a few years they would have a monopoly of the trade by virtue of the superiority of their seed. No enterprise, in our opinion, offers a finer field for usefulness or a larger profit upon investment, than a well conducted seed farm in the South. Already growers of okra, watermelons, cantaloupes, onions, etc., are found, because it has been demonstrated that Southern grown seed of these varieties do best in the South. Doubtless similar conclusions would soon be forthcoming in regard to nearly all of the vegetables now grown in the South.

The following results have been obtained through four years of trial, and although they are not as complete as was expected, yet they serve the purpose of comparison in many instances. Inexperience in curing in our damp climate, the prevalence of drouth in one or two seasons, and the attack of weevils, have all prevented a multiplication of the experiments as designed. The season of 1898 was favorable to the garden. Excepting the freeze in February, the year 1899 was also favorable. In 1900 most of the seed were harvested in good condition, while 1901 was marked by a very cold spring and a dry early summer, which permitted of the successful harvesting of the early seed, but the wet weather of midsummer and early fall badly damaged the late seeds. The above is the record at Baton Rouge. At Calhoun the years 1898 and 1899 were quite favorable; the year 1900 was excessively wet, and the year 1901 was cold in the spring and very dry up to midsummer. At Audubon Park the seasons were not detrimental at any time to the proper

harvesting of such seed as matured. Several times excessive wetness prevented full fruition. To have the experiments as uniform as possible, seeds for the three stations were ordered in duplicate from J. M. Thorburn & Co., of New York, and J. Steckler Seed Co., of New Orleans, although it is believed that most of the seed from the latter house were grown in the North. With these seed were tried the home grown seed of the same varieties. It was found with some kinds that growing so many varieties so close together, that the seed were mixed and not truly representative of the variety. However, this did not affect the validity of the test.

ARTICHOKES.

No home grown seed tried. Plants grown only at Audubon Park and Baton Rouge. At Audubon Park, plants after yielding well, were destroyed by insects at the root. In Baton Rouge three varieties were grown, Large Green Globe (S) and French Globe (T) and Italian Purple (T). The severe cold of 1898 and 1899 killed the last two; the other variety furnished excellent buds. To grow artichokes successfully the soil must be fertile, well cultivated and the plants must be protected in severe cold weather and not permitted to mature buds. To obtain extra large buds only those on terminal branches should be allowed to grow. Tying is also practiced to increase size. This vegetable commands a high price in the New Orleans market, and should be more extensively grown.

ASPARAGUS.

This plant has not been successful at Audubon Park. Only fairly well at Baton Rouge, and not a great success at Calhoun.

Barr's Mammoth, Conover's Colossal, Palmetto and Moore's Cross-bred were the varieties used. Palmetto was the best at Baton Rouge, ripening from February 20 to March 10, and yielding 35 on a scale of 40 for the four years. The others were about equal, ripening from February 25 to March 15, and giving in yield 23 and 24 out of 40.

At Calhoun, Colossal and Palmetto did fairly well.

Great care is required in establishing a good asparagus bed, but when once established affords a lasting pleasure to the family in the delicate sprouts furnished. A sandy loam, very fertile, is best adapted to this crop.

BUSH BEANS.

The following varieties were tested: Early Mohawk, Improved Valentine, Wardwell's Kidney, Improved Golden Wax, Detroit Wax, Best of All, Red Kidney, Early Yellow Six Weeks, Dwarf German Wax, Valentine Wax, Marvel of Paris, Prolific Market, White Wax, Perfection Wax, Refugee, Kenny's Rustless, Flageolet Wax, Pride

of Newton, Davis' Wax and Grenelle's Golden.

At Audubon Park and Calhoun in every instance the home raised seed did just as well as those from either Steckler or Thorburn. At Baton Rouge, nine times in four years the home seed fell behind, fifteen times it ran ahead, and in all the other trials were equal. The results show plainly that when the seeds of bush beans are carefully selected and cured they will be the equal, if not the superior, of those grown in the North. An attempt was made at Calhoun in 1901 to estimate bushels of mature beans per acre. The season was very dry and results were very low, running from 14.7 bushels down to 5 bushels per acre.

The varieties recommended for general culture are early Mohaw, Valentine, Refugee and Pride of Newton.

DWARF LIMA BEANS.

The following varieties were grown: - Burpee's, Henderson's, Thorburn's and Wood's Dwarf Limas. At Audubon Park these dwarf varieties are short-lived and fail to produce full pods. At Calhoun, Burpee's Large Lima has been unsuccessful, the smaller limas doing well. The home-raised seed were superior at Audubon Park and Calhoun, while at Baton Rouge they fell behind once and ran ahead once.

At Calhoun last year, the yield per acre in bushels were, Wood's Prolific Bush, 31.8; Henderson's, 29.4.

POLE BEANS.

Covering the lima and wax varieties were, the Golden Cluster, Southern Prolific, Carolina, Creaseback, Golden Wax Flageolet, Lazy Wife's, Willow Leaf, Dutch Case Knife, Large White Lima and Challenger. The seed grown upon the stations were in every instance equal to the purchased seed, and in several instances superior. The Carolina and Willow Leaf were the best of the limas at Calhoun, with the Carolina at Baton Rouge, and the Willow Leaf at Audubon Park.

The Creaseback was the best variety of wax at Calhoun; the Golden Cluster and Southern Prolific at Baton Rouge, and the Southern Prolific at Audubon Park.

BEETS.

The following varieties have been tested: Bassano, Black Queen, Crosby's Egyptian, Crimson Globe, Dewing's Red Turnip, Early Blood Turnip, Egyptian, Eclipse, Edmond's, French Red Top, Golden Tankard, Half Long Blood, Long Blood and Lentz's Mammoth Long Red. It has been difficult to carry the spring planting of beets to a successful seeding. Recently it has been accomplished and the seed thus obtained has been planted, and the results therefrom

have been very satisfactory. Most of the above varieties were successful everywhere, but at Audubon Park the Early Blood, Eclipse and Lentz have been the most desirable varieties. At Baton Rouge, Early Blood, Lentz, Eclipse, Egyptian and Dewing's are recommended, while Calhoun is partial to Early Blood, Early Bassano, Early Blood Turnip and Eclipse.

BRUSSELS SPROUTS.

This excellent vegetable is not appreciated as it should be in the South. It is grown to a very limited extent. The seed are sown and plants treated as is done with cabbage. It grows well and will yield marketable sprouts from May 15 to June 15.

Unfortunately no seed have been obtained from home grown plants, and therefore no test made of home grown seed. Only one variety has been cultivated.

BROCCOLI.

Care is required to raise this plant successfully as far South as lower Tennessee. Sown in the early spring they rarely succeed. Sown in August and transplanted in September to the garden, they will form good heads unless killed by very early frost.

CABBAGE.

In the South two crops of this popular vegetable can be grown each year, if proper attention be given. By sowing the seed early in January and transplanting to the field in March, excellent heads will be obtained in May and June. By sowing in August and transplanting to the field in September, a fall and winter crop is secured. Different varieties are used for these two crops.

No success has been achieved in raising seed from home grown plants. In our trials nearly every variety known to our seedsmen have been used. Some have been uniformly successful; others were not desirable. For the spring crop, the York, Early Flat Dutch, Wakefield and Winningstadt are perhaps the most desirable, while for summer and fall crop the Early Summer, Succession, Stein's Flate Dutch and St. Denis are to be preferred.

The cabbage crop is extremely large in and around New Orleans, and along the line of the Illinois Central railroad. It is grown in the fall, and during the winter and early spring is shipped in immense quantities to the Western markets.

CAULIFLOWERS.

This delicious vegetable is grown quite extensively around Grand Isle, in Jefferson parish, and on the lower Mississippi coast for the New Orleans and Western markets. The seed is sown in August and transplanted in September, and if not caught by early frosts, magnificent heads are produced. Like cabbage, two crops per

year may be grown. Fine crops of spring cauliflower are raised annually. Seed from home grown plants have been raised and planted, and it is believed that better and finer plants were obtained than from Northern grown seed.

The earliest varieties are the most desirable: The Snowball, Erfurt and Early Paris are therefore recommended.

The fall crop of this year, 1901, in South Louisiana was entirely killed by the early freeze in December. In a favorable season like 1900, every variety gave a large crop with fine heads. The spring crop must be sown in January and transplanted to the field in March, and the soil must be rich to insure rapid growth and good heads.

CARROTS.

These grow exceedingly well throughout the State. They can be planted almost every month in the year. To obtain good seed, the spring planting should be used, since fall plants are liable to give infertile seed.

The home grown seed are in every way the equal of those obtained elsewhere.

The Long Orange, Danvers, St. Valerie and Early Horn are all very desirable varieties.

CRESS.

This vegetable requires a rather moist soil for its best development. It is extensively used and can be easily grown. Three varieties were grown with more or less success, according to the character of the soil. They were the Broad-leaved, Water and Pepper.

CUCUMBERS.

A large number of varieties have been grown at all three stations. Seed from each variety were annually saved and planted, and while the varieties became thus badly mixed, they produced well and gave unmistakable evidence of their superiority of vigor and productivity. By soaking the seed before planting, the injury from beetles is minimized by hastening early germination.

Home raised seed are as desirable in every way as commercial seed. The varieties to be commended highest are New Orleans Market, White Spine, Long Green and Early Cluster.

EGG PLANTS.

These have grown well at both Baton Rouge and Audubon Park, and the home grown seed have in every instance proven superior to commercial seed. Seed sown in hot-bed early in January and the young plants transplanted to the garden early in April will give an early and large crop of this delicious vegetable.

The New Orleans Market, the New York Market and Early

Dwarf Purple are varieties that have succeeded well with us.

Egg plants require a very fertile soil for their best development.

SUGAR OR SWEET CORN.

This is but little grown in Louisiana, everybody seeming to prefer our field corn for table purposes. It is very rarely found in the markets of New Orleans, and it is difficult to effect a sale of roasting ears to the "Arabs" who sell to the market men, and the reason assigned is that there is little or no demand for it. These corns are so superior for table purposes, to the field corns, that they have but to be tried to be preferred.

The first planting should be made in February, followed by later plantings at intervals of two weeks; or better still, to plant at once a number of varieties varying in time of maturity and thus insuring a supply of roasting ears from May till July, at which time field corn is available for the table. The early maturing varieties are often attacked by the boll worm, and hence many prefer to plant the Early Adams, a dent variety, which matures early and has a closely appressed shuck projecting well over the ear, and thus protecting it from attacks of insects. The Early Adams and the Extra Early Adams varieties are usually classified as garden corns, but do not belong to the sugar or sweet class of corns.

The seed of these corns usually mature in June and July, when daily showers are apt to occur, which render the task of successfully drying the seed a difficult one.

When properly saved, home raised seed are decidedly better than Northern grown seed.

For a succession, the following are to be commended: First in the Market, Crosby, Black Mexican, Hickox, Country Gentleman, Stowell's Evergreen, and Late Mammoth. Many others are excellent varieties.

Besides raising this corn for table purposes, over twenty-five varieties have been tested as an early stock food, particularly for hogs, which are permitted to gather it and which will, when in the roasting ear stage, eat stalk, blade and ear.

ENDIVE.

Four varieties have been grown and all have produced good crops when either the commercial or home raised seed were used.

These varieties are given in the order of excellence: Fine Curled, Broad-Leaved, Self-Blanching and Green Curled.

KALE.

This is grown both for eating and decorative purposes. Several varieties received from Landreth of Philadelphia, in 1899, are decidedly ornamental and were used as a border plant with fine effect.

It is also served for the table. The varieties used were the Bloomsdale, Mosbach, Dwarf, Curled, Tall Scotch, Purple Dwarf and Dwarf Extra Curled.

The first three are the most desirable varieties. Usually kale will grow throughout our winters.

KOHL RABI.

"This grows successfully at each station. By planting the seed early in March, fine crops may be obtained. For commercial purposes, the white varieties are preferred. As a hog food it has high value, and the surplus is sometimes disposed of successfully in feeding stock.

No seed have been grown. The very limited extent to which this vegetable is grown in Louisiana, did not justify extra exertions required in fruiting it, and therefore energies were directed to the solution of more popular problems.

LEEKs.

Very little has been done with leeks beyond growing them, which is easily and successfully done anywhere in Louisiana. This is not a popular vegetable, and is rarely grown. The London Flag was our best variety.

LETTUCE.

Lettuce may be sown at almost any time in the year in Louisiana. For early spring use it should be planted in February or March. For producing seed, early plantings are best. There is no lack of productiveness, and no trouble in harvesting and saving the seed.

Home raised seed are in every way desirable. Our best varieties are Passion, Royal Cabbage and White Paris Cos and Brown Dutch, the last especially good for winter sowing.

MUSKMELONS AND CANTALOUPEs.

Our finest melons are raised from home grown seed. Indeed, it seems necessary to grow the seed of any variety several years here, before it will successfully resist the blight (oidium), which is quite a menace to the newly introduced varieties. By soaking the seed in warm water before planting, to hasten germination, and by cultivating the hills frequently while coming up, will largely decrease the injury from beetles. The varieties presented to the farmer by the seedsmen possess different resistant powers to the blight, and those varieties should be selected which are nearly blight-proof. Of these the New Orleans Market most fully fills the requirements. The Augusta Market is nearly as good. Early Hackensack, Osage and Rocky Ford are to be selected for their blight-resisting proper-

ties, while the Paul Rose stands without a peer in lusciousness.

The following is given as the calculated yields obtained at Calhoun:

MUSKMELONS AND CANTALOUPE PLANTED MAY 2.

VARIETY.	Date of Blooming.....	When Marketable.....	Number salable Melons Per Acre	Average Number Per Hill.....	Average Weight.....	Quality, 0-10.....	DESCRIPTION OF MELON.
Osage (T)	6-7	7-21	3060	3	3	7	Oval, netted.
Osage (S)	6-7	7-21	3213	3	3	7	Oval, netted.
Long Island Beauty (T)	6-7	7-12	4590	4	4	6	Round, ribbed, nearly smooth.
Long Island Beauty (S)	6-7	7-12	4896	5	4	6	Round, ribbed, nearly smooth.
Hackensack (T)	6-7	7-12	4437	4	3	6	Round, ribbed, nearly smooth.
Hackensack (S)	6-7	7-12	7650	7	3	6	ribbed, netted.
White Japan (T)	6-7	7-15	6120	5	3	7	Round, ribbed, netted.
White Japan (S)	6-7	7-15	5508	5	4	7	Round, ribbed, nearly smooth.
Pineapple (T)	6-7	7-20	4743	4	2½	6	Oblong, oval, smooth.
Pineapple (S)	6-7	7-20	6120	5	4	8	Oblong, oval, smooth.
Chicago Nutmeg (T)	6-7	7-21	4896	4	3	8	Oval, netted, ribbed.
Netted Nutmeg (S)	6-2	7-10	7956	7	2	9	Oval, netted, ribbed.
Rocky Ford (T)	6-5	7-18	7650	6	1	9	Round, ribbed, netted.
Netted Citron (S)	6-2	7-6	6120	5	1½	9	Round, ribbed, netted.
Extra Early Hacken- sack (T)	6-2	7-10	6120	5	2½	5	Oval, round, ribbed, netted.
Persian or Cassaba (S)	6-9	7-20	4590	4	5	9	Oval, round, ribbed, netted.
Large Yellow (T)	6-2	7-10	4590	4	3½	5	Round, ribbed, nearly smooth.
Emerald Gem (S)	6-10	7-20	3672	3	1	6	Oblong, oval, ribbed, netted.
New Orleans Mkt. (S)	6-6	7-16	7650	6	4	10	Oblong, ribbed, smooth.
New Orleans Mkt. (Sta.)	6-6	7-16	5355	6	4	10	Round, slightly

A lady friend of the stations brought with her on her return from a sojourn on the Isle of Man, some muskmelon seed of a

peculiar kind which she found growing there, and donated them to the station. They were tested last year and found to be a vigorous, productive variety of the true muskmelon type, and to some very palatable. Seed have been carefully saved and will be more extensively planted the present year. The varieties received from the Department of Agriculture and numbered No. 1, 121, 141, 148, 149, 150, 153, 154 and 157 were planted. Several failed to germinate. A few germinated but produced no fruit. Results were therefore negative.

WATERMELONS.

Nearly every variety sold by our seedsmen have been tested at all three stations. Most of these varieties of watermelons have had their origin in the South. The Florida Favorite, Seminole and Girardeau's Triumph are Florida products. Kolb's Gem originated in South Alabama. The Rattlesnake, Pride of Georgia and others were started in Georgia. In fact, nearly every popular melon today originated south of Virginia and north of the Rio Grande. Nowhere on earth are such melons grown as are shipped by the carloads every year to the Northern and Western markets from Southern fields. It is therefore useless to announce that Southern grown watermelon seed are superior to those grown anywhere else. The varieties tested were: Sugar Loaf, Rattlesnake, Boss, Blue Gem, Bradford, Cole's Early, Dixie, Duke Jones, Eden, Eutaw, Florida Favorite, Golden Rind, Girardeau's Triumph, New Favorite, Ice Cream, Gray Monarch, Jumbo, Joe Johnson, Jackson, Kleckley's Sweet, Kolb's Gem, Lone Star, Mammoth Ironclad, Mountain Sweet, Pride of Georgia, Sweet Siberian, Seminole and Vacluse. Besides these, Nos. 1, 2, 3, 10, 12, 14, 17, 18, 19, 20, 27, 29, 38, 39, 41, 43, 44, 46, 52, 53 and 54, sent out by the United States Department of Agriculture, were also tested. None of them proved desirable. Nos. 27 and 54 failed to germinate; the rest made fruit. The yield was from 2 to 8 on a scale of 10. No. 2 was the heaviest bearer. Nos. 18 and 38 scored 7—the rest under this. For family use, the following are strongly recommended, viz.: Florida Favorite, Rattlesnake, Pride of Georgia; Seminole and Bradford are also good eating melons.

For market purposes Girardeau's Triumph, Kolb Gem, Duke Jones and Pride of Georgia are generally used.

In the growing of the larger varieties for market, efforts should be made not to exceed 2,000 melons per acre, and these should exceed twenty pounds each in weight. There is even more money in 1,000, weighing forty to fifty pounds each per acre.

MUSTARD.

Mustard is grown by most every family, especially in winter and spring for "greens." A succession of this plant may be obtained

from early fall through the winter into late spring or early summer. The seed are easily saved and can be planted with the assurance of full yields. In fact, there is no excuse for buying mustard seed. The following varieties have been grown for several years from seed raised on the stations, with great success: Broad Leaved, Chinese, Large Curled, and Southern Curled.

The fibrous rooted has not been successful and has given no promise of future usefulness.

OKRA OR GUMBO.

This is universally grown in the Southern States, and until very recently was generally propagated from home raised seed. Being emphatically a Southern plant, of course the home grown seed are the best. However, new varieties are occasionally introduced, and these must be purchased of our seedsmen. "The Tall Growing" variety is the old stand-by, but the newer varieties, "Density," "Dwarf Green," "Dwarf White," "French Market," "Perkins' Mammoth Pod" and "White Velvet" have been introduced and thoroughly tested. While in yield, none are equal to the "Tall Growing," yet the Velvet Dwarf White and Density are earlier and perhaps more delicate in quality. A succession would include some of the earlier varieties with the Tall Growing, planted later, to furnish a full supply throughout the summer and up to frost.

There is no trouble in harvesting and saving the seed from this plant in large quantities.

ONIONS.

Thousands of barrels of this vegetable are raised annually for the market—all grown from Creole or Bermuda seed. No Northern grown seed will mature good onions in the lower half of Louisiana, and are inferior even in North Louisiana.

The origin of the Creole onion is shrouded in age and obscurity. It has been cultivated here for over one hundred years. It is believed to have come originally from Southern Europe. Exactly what variety the Creole came from is now impossible to tell. It is in flavor stronger than the varieties grown in Italy. In color it is between the red Wethersfield and the lighter Strassburg. In lower Louisiana the seed is sown in September, broadcast. The beds are covered with Spanish moss during the heat of the day until fully up. When the young plants are the size of a lead pencil, they are transplanted to rows one to two feet apart and six to eight inches in the row. In April or early May the onion is fit to market or for use. Further North, where the winters are too cold for the above practice, the seed are sown in January or February in the rows directly and thinned to a stand when the plants are large enough.

All of the Creole seed are grown in Louisiana.

The Red and White Bermuda are planted for home use and

near-by markets, but do not keep well enough for distant markets.

The seed of the above varieties are easily obtained, while Northern onions will not perfect seed in this climate.

SHALLOTS.

These are a variety of onions growing in clumps, and are also very generally grown in Louisiana. Of the two varieties, Red and White, it has been found by our experiments that the latter is far preferable, keeping well throughout the summer.

PARSLEY.

This grows well all over the State. It can be sown in August, September and October, and again in January, February and March. Six varieties have been grown; the curled are more desirable for garnishing purposes, but are not so vigorous in growth as the plain. The Common Curled or Double Curled are probably the best adapted to all of our wants.

PE TSAI (CHINESE CABBAGE).

This is a valuable addition to our fall and winter vegetables and has been planted regularly by the stations. Its season, manner of planting and cultivating are similar to cabbage.

PEAS.

The seeds of peas require some care in saving, particularly the later varieties, which mature in June when abundant rains usually prevail. Again, trouble is sometimes encountered from insects. However, the stations have succeeded in securing seed from nearly every variety sold by the seedsmen, and when these seed were saved in proper condition have given just as good results as those purchased.

The following varieties have been grown: American Wonder, Alaska, Alpha, Advance, Blue Beauty, Black-eyed Marrowfat, Champion of England, Daisy, Duke of York, Durham Early Market, Dwarf Blue Imperial, Dwarf Sugar, Eugenia, Early Washington, Early Market, First and Best, Gradus, Large White Marrowfat, Layton's Long Pod, Little Gem, Paragon, Prolific Market, Queen, Royal Dwarf Marrowfat, Stratagem, Station, Surprise, St. Duther's, Tom Thumb, Telephone and Tall Sugar.

There is quite a difference in the vigor and yield of the above. Some of them are admirably adapted to our climate; others are not.

This may be best illustrated by the yield of dry peas per acre at Calhoun last year, which were from 6.8 bushels for American Wonder to 23.78 bushels for White Marrowfat, the home grown seed keeping pace with purchased seed in yield.

The following are recommended for the early crop, Alaska, Early Washington, First and Best, and Little Gem. For the late

crop, Telephone, Marrowfats, Champion of England and Tall Sugar.

PEPPERS.

Peppers are used extensively in this State—the hot varieties for seasoning and sauce, and the mild kinds for salads. Several varieties of each have been grown. Peppers should be planted in hot-beds and transplanted in the field after the soil is warmed up. Seeds of all kinds have been raised and planted. A few varieties have the tendency to lengthen their period of maturity, but otherwise home raised seed have acquitted themselves very handsomely. Of course, growing so many varieties in the same plat, the purity of each could not be preserved.

The following varieties were grown: Bell, Birdseye, Cayenne, Columbia, Chili, Cardinal, Celestial, Golden Dawn, Red Cherry, Ruby King, Red Cluster, Sweet Spanish and Tabasco.

Of these, two are generally grown—the Birdseye and the Sweet Spanish. To these we would add Bell, Cherry, Tabasco and Cayenne.

SWEET POTATOES.

These are grown more largely in the South than any other vegetable. The varieties grown are numerous though not well differentiated. Local names are frequently given to well known varieties and thus serve to increase the trouble in deciding a true nomenclature of sweet potatoes.

At Audubon Park no sweet potatoes have been bedded for years, and yet an abundant supply is annually obtained from volunteer sprouts coming from the small potatoes left in the soil the previous fall. In this way two to four varieties have been carried for many years.

At Baton Rouge fifty-three varieties were cultivated for the purpose of study and for distribution among the farmers. On account of the small quantity of each variety raised, only a few roots of any one kind can be spared to the numerous applicants. The severe freeze of 1899 destroyed some varieties, while a few have been obliterated by the soft rot. In 1900 some new varieties were obtained from Jos. Vestal, Little Rock, Ark., and in 1899 four kinds, viz., Carolina Lee, White Sealy, Red Sealy and White Gilk were obtained from the Department of Agriculture.

At Calhoun forty-six varieties have been grown with lowest and highest yields, as given below:

VARIETIES.	LOWEST.	HIGHEST.
Arkansas Beauty .....	...	175 Bushels.
Archer's Hybrid .....	...	187
Brazilian	105	165
Bloomer's Nansemond .....	...	234
Dooley .....	...	154
Early Golden	266	485

Early Carolina	116
Florida Yam	340
Florida Yam No. 2.....	353
Florida Bunch	221
General Grant	127
Gold Coin	117
Gold Skin	192 405
Georgia	96 141
Hayman	268 393
Jersey Yellow	226 234
Jersey Bfg Stem	94 273
Kentucky White	221
McCoy's	185 441
Nancy Hall	302
Negro Choker	341
New Jersey	193
Norton	270
Peabody	299 306
Polo	265
Padesha	151
Providence	250 250
Pumpkin	85 175
Red Bermuda	84 185
Red Nansemond	113 257
Red Spanish	277
Southern Queen	295 337
Southern Red Yam	214 295
Strasburg	213
Shanghai	291 509
Sugar	163
Ticotea	286
Tennessee Notch	162 318
Vineless	230
Yellow Nansemond	195 249
Yellow Red	210 483
Yellow Yam	119 205
Yellow Yam, New Arkansas.....	312
U. S. Department Agriculture, No. 2969.....	324
U. S. Department Agriculture, No. 2970.....	382
U. S. Department Agriculture, No. 2971.....	

Where only one column is given above, it indicates that the variety has been under cultivation only one year.

The above were grown with slips from the potato bed. Vines were used from the growing potatoes to plant other patches. They were set out in June and the yields from vines varied between 45 and 266 bushels per acre. The Queen and Hayman were again large yielders. These were the only two that exceeded 200 bushels per acre, though there were many between 150 and 200 bushels.

The following varieties were grown at Baton Rouge and the numbers opposite give the lowest and highest yields per acre in bushels for the years they have been under cultivation:

VARIETIES.	LOWEST.	HIGHEST.
Arkansas Beauty	100	200 Bushels.
Archer's Hybrid	200	250
Brazillian	150	300
Bloomer Early Nansemond	50	50
Big Stem Early Yellow Nansemond	50	150
Caroline Lee	50	250
Dooley	250	400
Early Golden	250	500
Early General Grant	350	500
Early Carolina .....	...	150
Florida Yam	200	400
Florida Bunch .....	...	250
Gold Coin Vineless .....	...	150
General Grant	200	300
Gold Coin	100	200
Gold Stem	150	350
Georgia	100	250
Hayman	250	450
Jersey Red .....	...	50
Jersey Yellow .....	...	100
Japan No. 3 .....	...	100
Japan No. 5 .....	...	150
Kentucky White	250	400
McCoy's	150	300
Negro Choker	50	350
Pierson's .....	...	450
Peabody	300	450
Pumpkin	50	400
Providence	500	500
Polo	100	400
Red Nansemond	250	500
Red Bermuda	250	500
Red Bermuda, Illinois .....	...	250
Red Spanish	50	200
Red Sealy .....	...	300
Southern Queen	400	500
Southern Queen, Illinois .....	...	300
Shanghai, or California	350	400
Ticotea	200	450
Tennessee Notch	400	450
Up River .....	...	150
Vineless	250	450
Vineless Bush, Illinois .....	...	150
Vineland Fancy .....	...	150
Vestal's Arkansas Yam	150	350
Yellow Beans	250	400
Yellow Red	300	500
Yellow Nansemond	150	350
Yellow Nansemond, Illinois .....	...	250
Yellow Yam	300	400
White Gilk	100	200
White Sealy	200	300

Where only one figure is given, the varieties were under cultivation one year. Nearly all of the others have been under cultivation for four years or more. The varieties recommended for the

table are: Early Golden, Pumpkin, Yam, Vineless, Georgia and Sugar. The Early Golden and Vineless are the most productive of these varieties at all the stations.

For later use and stock purposes, Providence, Red Nansemond, Yellow, Red Hayman, Peabody, Queen, Shanghai, Red Bermuda, etc., may be used.

IRISH POTATOES.

A diversity of belief exists as to the best seed Irish potato. As remarked elsewhere, some still cling to the ancient idea that only an Eastern potato is fit for seed, and back their belief up every year by paying an increased price for potatoes from Maine. Others believe that Northern potatoes are superior to Southern and annually thousands of dollars are expended in the purchase of such seed for planting purposes. There is a constantly growing number of truck and potato growers who are confident that Southern seed are best from a money standpoint, yielding larger and more merchantable tubers than any other seed. It is their custom to plant the culls from the spring crop in the summer and save the product therefrom for spring planting. This custom prevails among the truck growers of the Atlantic coast, and only from absolute necessity will they use a Northern grown potato for seed.

That there was no difference between Western and Eastern grown potatoes, when used as seed, was demonstrated years ago by these stations. That Southern seed are as good if not better than Northern seed, is clearly shown by the experiments of the last few years. Incidentally, the merits of the different varieties are also demonstrated. A large number of varieties have been tested at all three stations. Of these varieties, seed grown in the East, in the Middle States, in Virginia, Georgia, and on the stations, have been obtained as far as possible. All experiments have been triplicated, thus testing them under different conditions of soil and climate.

Our home seed have been obtained by continuous plantings twice a year—spring and fall—or keeping them from spring crop till the next spring crop. The last operation always involves a loss of seed, sometimes large, and always too heavy for profit to the farmer. Again, the fall crops are rarely large or even satisfactory, great trouble being experienced in obtaining a stand in many seasons. However, they are always worth growing in order to secure seed for the spring crop. It is believed that methods of securing quick stands and rapid growth in the summer will ultimately be discovered and practiced. It is quite curious to see the difference in the fall crops of different years. The fall just closed gave an excellent yield at Audubon Park, with only a fair crop at Baton Rouge, and a failure at Calhoun. The Northern seed, as a rule, sprout quicker than home raised, due evidently to the sudden change in

temperature from the North to the South. This is shown in the spontaneous sprouting of the potatoes in the barrels in the warehouses of the Southern merchants before they are shipped to the farms. But while they sprout more quickly, they run their existence and die some time before the native seed. Nor do they produce in their short existence so large a quantity, nor so smooth a product as the natives. It is possible, however, by selection, to obtain a Southern seed equally as early and in other respects superior.

At Baton Rouge, over 100 varieties of home raised seed were grown through a series of years before the trials began. These varieties were tested against ten varieties of Eastern seed, fourteen of Northern grown seed, fifteen of Virginia raised seed, two of Georgia raised seed, and fourteen of varieties grown at the North Louisiana Experiment Station, Calhoun, La. The immense data, extending over four years, can not be given here. It would be confusing to the reader. The table of results has been condensed with the following averages:

—AVERAGES.—		
	Average Yield.	Highest Yield.
110 varieties of home-raised seed.....	51	143 Bushels.
10 varieties of Eastern seed.....	42	123
14 varieties of Northern seed.....	35	90
15 varieties of Virginia seed.....	56	125
2 varieties of Georgia seed.....	60	100
14 varieties of Calhoun seed.....	70	166

The highest average yield was from potatoes grown in the light, sandy soil of Calhoun, which was 118 bushels per acre. The next was the seed raised at Baton Rouge, 97 bushels per acre, then Virginia grown seed, with 90.5 bushels, followed by Eastern seed, 82.5 bushels, Georgia, 80 bushels, and Northern, 62½ bushels. Many of the varieties included in the 110 home raised, given above, were never very productive and hence lowered the general average greatly. The Georgia varieties were received one year too late to make a large crop, and hence this loss lowers the general average materially on account of small number of varieties.

The results at Calhoun with varieties planted from seed raised in different sections of the United States gave the following averages:

	Yield Per Acre.	Per Cent. of Total Merchantable.
Home-raised seed	127 bushels.	80 per cent.
Georgia-raised seed	148	74
Virginia-raised seed	149	81
Eastern-raised seed	112	62
Northern-raised seed	97	61

There is a marked difference in the percentage of merchantable

potatoes from the seed grown North and South.

At Audubon Park a more limited number of varieties have been on trial. While several disasters have occurred in the last four years to mar the comparison of yields, yet it is clearly apparent that our home raised seed have given as good yields and sometimes better potatoes than purchased seed.

The following varieties are to be commended: Early Rose, Bliss' Triumph, Beauty of Hebron, Rural New Yorker No. 2, and White Elephant, of the old and standard varieties. There are many new varieties that have given so far good results, but must be further tested before they can be unqualifiedly endorsed.

PUMPKINS.

The following varieties were grown from seed purchased and home grown seed: Georgia Field, Virginia Mammoth, Connecticut Field, Kentucky Field, Large Cheese, Cashaw, Crookneck, King of Mammoths, Jonathan, Tennessee, Sweet Potato, Jumbo, Large Toms and Winter Luxury. It was universally found that home raised seed produced more vigorous vines, more fruit, and a longer period of bearing.

The Georgia Field, Virginia Mammoth, Kentucky Field, Large Cheese and Mammoth are to be highly recommended for field culture. As an article of food for stock the pumpkin should be largely cultivated on every farm. They can be fed through the summer, fall and winter in this climate. Some varieties, particularly the Kentucky Field, will keep an almost indefinite time.

RADISHES.

Many varieties of this excellent vegetable are on the market. The following were successfully grown from purchased and home raised seed: Black Spanish, Chartier, Chinese Rose, Chinese Scarlet, Early Scarlet Turnip, Early Frame, Early Long Scarlet, French Breakfast, Golden Globe, Long Bright Scarlet, Long Scarlet Top, Half Long French, Icicle, New Earliest White, Roman Carmine, Round Scarlet, Chinese, Red Rocket Scarlet, Half French, White Strasburg, White California, White Summer Turnip, White Rockett and White Top Rocket. The best yields have been from home raised seed. Perhaps the most desirable varieties are the French Breakfast, Carmine, Chartier, Strasburg and Chinese Rose. For fall and winter use the Black Spanish and White California are to be recommended.

SPINACH.

The following varieties were successfully grown from both home raised and purchased seed. All varieties seed abundantly:

Broad Leaved Flanders, Early Large Leaved Savoy.

SQUASHES.

Generally the only variety of squash grown in this State is the Early Bush or Pattypan. This is a most desirable variety and is probably not excelled by any other, yet there are others of decided merit which can be easily grown.

A large number of squashes have been grown; in one instance, over fifty, yet as a rule our number was far below this in quantity. The following are the one regularly grown, Boston Marrow, Delecta, Early Bush, Essex Hybrid, Fordhook, Faxon, Golden Custard, London Marrow, Perfect Gem, Pike's Peak, Turban and Everbearing.

Home grown seed have produced always maximum results. These seed are so easily grown and saved that there is not the slightest excuse for buying them.

TOMATOES.

Many excellent varieties are on our market. No vegetable has been more rapidly and completely developed in recent years than this popular favorite. It is now almost universally eaten, either raw or cooked. As a salad it is highly esteemed, and it is the one vegetable that is now served in many houses at every meal. The following varieties were tested: Atlantic Pride, Acme, Aristocrat, Autocrat, Beauty, Buckeye State, Brighton's Best, Bedell's Long Island, Cleveland's Advance, Crimson Cushion, Democrat, Dwarf Champion, Diadem, Extra Early Dwarf, Early Richmond, Favorite, Freedom, First Early, Fordhook's First, Golden Queen, Honor Bright, Imperial, Ignatum, King of the Earlies, Kansas Standard, Large Yellow, Magnus, Mikado, Moore, Matchless, New Rose Peach, New Buckeye, Paragon, Ponderoso, Perfection, Quarter Century, Rosalind, Stone, Trophy, Thorburn, Trucker's Favorite, Tree, Waldorf.

Many of the above were grown from seed which had been home grown for four years and the results were entirely satisfactory. Home raised seed have in every instance given maximum results.

Many of the above varieties are good, but some are extremely meritorious. Among the latter may be mentioned the Acme, Beauty, Perfection, Stone and Ponderoso.

TURNIPS.

Two crops a year of turnips can be grown; the one in the spring and the other in the fall. They may be sown broadcast or planted in rows and cultivated. Both methods are practiced. It is believed that seed from the fall crop are superior to that from the spring crop. This, however, has not been definitely established. Turnips are grown for salad, as well as for their roots.

The White Flat Dutch and Early Purple Top are the varieties

usually selected for broadcast sowing, and these, with the addition of Purple Top Globe and Early White Egg, are perhaps the best for cultivation in the drill. The excellence of home raised turnip seed is too well known to need emphasis here. The turnip, and its congener rape, should be more largely sown throughout the South for stock purposes.

The following varieties were grown: Amber Globe, Cowhorn, Early White Flat Dutch, Early Purple Top, Large White Globe, Munich, Milan, Purple Top Globe, Seven Top, White Egg, Yellow Ball and Yellow Aberdeen.

JAPANESE VEGETABLES.

(RECEIVED FROM UNITED STATES DEPARTMENT OF AGRICULTURE, SECTION OF PLANT AND SEED INTRODUCTION.)

These were received about the middle of April, too late for many of the kinds to make a successful growth before summer:

4965—Watermelon. Ripe July 5. A small, round, dark-green melon, flesh dark red, tough and lacks sweetness. Very prolific.

4966—Bean. A bush bean, very much like the ordinary bush bean in appearance. Growth successful and quality good.

4967—Mitsuba. Seed failed to germinate.

4968—Tennoji Turnip. Growth vigorous and healthy. Quality poor. Coarse and very strong flavor.

4969—Salsola Soda. Seed failed to germinate.

4970—Natamame Canavalia. Made a vigorous growth. An ornamental shade plant, but is hardly fit for culinary purposes.

4971—Perailla Arguta. Seed failed to germinate.

4972—New Zealand Spinach. Made a highly successful growth. Stood the dry weather perfectly and seems well adapted to this climate.

4973—Jinroku Sasage. Belongs to the Dolichos family. Growth very satisfactory.

4974—Sunjack Sasage. Belongs to the Dolichos family. Growth very successful.

4975—Fudanso Beet. Of the edible caved variety. Growth fairly successful.

4976—Naga Yuyoa. A small gourd of no apparent value.

4977—Tokio Leek. Did not make successful growth. Seems quite hardy. Of very delicate flavor.

4978—Iwat Suki Leek. Made only a small growth, but seems hardy.

4979—Shimo-Nita Leek. Rather more successful than the above. Of a coarse texture and flavor.

4980—Early Soy Bean. A dwarfish form of the well-known

soja bean. Very prolific.

4981—Yamato Lappa Major. Growth very fine and vigorous. Apparently perfectly hardy.

4982—Red Stalk Lappa Major. Result same as the above.

4983—Senagawa Lappa Major. Did not make a successful growth.

4984—Buff Bean. Did not make a successful growth.

4985—Prolific Climber Bean. Growth quite successful. Of a good quality.

4986—Edible Chysanthemum. Seed failed to germinate.

4987—Luffa Petola ((vegetable sponge). The dish cloth gourd. Growth very successful.

4988—Long Red Carrot. Seed did not germinate successfully, but what did come up seemed quite hardy.

4990—Medium Green Cucumber. Growth successful. Quality fine.

4991—Joint Fruiting Cucumber. Growth successful. Quality fine.

4992—Cucumber. Growth very successful. The ordinary cucumber.

4993—Mak-Wa-Wir (muskmelon). Growth very successful. Small, round, light colored fruit. Quality very poor. Very prolific.

4994—Sodawara. Egg plant. Growth successful.

4995—Early Prolific Egg Plant. Quite successful. Resembles our Dwarf Purple.

4996—Everlasting Radish. Very successful. Poor quality.

4997—Summer Radish. Same as above.

4998—Long Otapuka Radish. A long white radish. Very astringent.

4999—Benincasa Cerifera. Unsuccessful.

5000—Ohiotan Gourd. A very vigorous growth.

5001—Pumpkin. Did not make a successful growth.

5002—Early Crepe Pumpkin. Made a good growth but bore no fruit.

APPLES.

BATON ROUGE STATION.

The season of 1898 was unfavorable; that of 1899 was rendered a failure by the unprecedented freeze in February, when most of the trees were in bloom; 1900 and 1901 were more favorable and more fruit matured. The following apples were fruited: Baldwin, Horse, Red Astrachan, Black Warrior, Kentucky Streak, Smith, Cullasago, Mangum, Transcendant, Carolina Watson, Maverack's Sweet, Taunton, Early Harvest, Red June.

CALHOUN STATION.

Similar seasons prevailed at Calhoun, save that the spring and

summer of 1901 were unusually dry. However, a good crop of apples was harvested. The blight was entirely eradicated four years ago, and since that time the trees have been doing well.

The following are the varieties which are doing well:

Astrachan,
Carter's Blue,
Stevenson's Winter,
Yopp's Favorite,
Chattahoochee,
Maverack's Sweet,
Horn,
Bonum,
Waugh's Crab,
Lauren's Greening,
Red Limbertwig,
Washington,
Strawberry,
Cullasago,
Nickajack,
Fall Wine,
Hass or Fall Queen,
Summer Cheese,
Rebel.
Hargrove,
Talbot's Pippin,
Mammoth Black Twig,
Maiden's Blush,
Siberian Yellow Crab,
Golden Sweet,
Seek No Further,
Arkansas Black,
Whitney's Crab,
Ferry,
Kiswick Codlin,
Stark,
Red Betigheimer.

**Moultrie (6),
**Rhodes' Orange (1),
**Shockley (5),
*Romanite (4),
*Tuscaloosa (9),
**Killagiskie (3),
**Pear or Palmer (10),
*Ben Davis (7),
*Red June (8),
**Yates (2),
*May Pippin,
*Hughes' Crab,
*Hyslop's Crab.

All of the varieties given in the second column have borne crops. Those marked with one star bore good crops, but did not keep well; those with two stars bore largely and kept well.

The figures attached indicate the order of merit as at present judged.

It is not to be inferred from above that the trees starred for their merits have been sufficiently tested to warrant extensive planting for commercial purposes. Many years must elapse before such decisive results can be obtained. For home orchards and family use

it is advisable to try a few trees of some of the above varieties.

PEARS.

At Audubon Park, only the sand pears have succeeded. **Several** varieties, names unknown, have borne heavy crops of large, handsome pears every year, save 1899, when all the fruit and **many of the** limbs were killed by the severe freeze in February. The pears are, however, fit only for cooking and preserving.

At Baton Rouge a large number of varieties are growing, all free from the blight. Here is the list:

Archangel,
Bijou,
Beurre D'Anjou,
Genessee,
Beurre Perpetual,
Lucy Duke,
Ott,
Beurre Bosc,
Tyson,
Urbaniste,
Beurre Clairgeau,
La France,
Philadelphia,
Guyot,
Beurre Easter,
Petite Margaret,
Flemish Beauty,
Hebe,
*Chinese Sand,
Hawaii,
Lincoln,
Doyenne d'Ete,
Beurre Hardy,

**LeConte,
Keiffer,
Smith's Hybrid,
Idaho,
*Reliance,
Beurre Langalier,
Henkell,
Beurre Giffard,
Clapp's Favorite,
Beurre Dheil,
Belle Lucrative,
Jefferson,
Bartlett,
Duchess de Angonleme,
Guy Lewis,
Howell,
Onondaga,
Lawson,
Koonce,
Louis Bonne de Jersey,
Coreless,
Osband's Summer,
*Winter Nelis.

* bore a small crop.

** bore a large crop.

It is impossible from present experience to recommend intelligently the varieties of pears (if there be any) suitable for commercial purposes in Louisiana.

PEACHES

Are not a success at Audubon Park, not even the seedlings of the Peento type. The last tree is dead.

At Baton Rouge, the varieties of the Peento type have suffered

destruction of fruit each year when in bloom, by frost. They are therefore worthless and will be discarded. The following varieties are doing fairly well:

Belle of Georgia,	General Taylor,	Elberta,
Sneed,	Early Rivers,	Yellow Mystery,
General Lee,	Chinese Cling,	Silver Medal,
Kite's Honey,	Heath's Cling,	Hale's Early.

Of these the Elberta has proven the most productive.

At Calhoun, the following varieties are recommended: Triumph, Champion, Smock's, Crosby's, Troth's Early, Austen's Late, Kalo Cling, Kaloola Free, Mamie Ross, Oriole, Berenice and Wonderful.

PLUMS.

At Audubon Park, the Japanese varieties of plums, which bore such large and delicious fruit in 1894, have all since died. A new orchard covering most of the varieties has been replanted and another trial is being given to this valuable type of plums.

At Baton Rouge, similar results have been obtained, both due perhaps to permitting the trees to over-bear while yet too young. Attention is now directed to a correction of this habit in the future. At Calhoun, some few domestic varieties have given good crops, but on the whole plum growing has not been a success.

FIGS.

At Audubon Park the fig trees were almost annihilated by the freeze of 1899. A large number of varieties have since been planted which are doing well and promise the first crop the coming season. A number of Smyrna and Capri figs have also been planted, and the coming year the insect (Blodophaga) to fertilize the former will be introduced. Arrangements have already been made for their introduction.

At Baton Rouge the trees were killed to the ground in February, 1899, but sprouted out at once. From selected sprouts a good crop was produced during the past year upon each of the following varieties:

Brown Ischia,	Lemon,	Agen,
Black Dattato,	Mission,	Angelique,
California Black,	Monica Bianca,	Bourgasotte,
Celeste,	Osband's Prolific,	Black Marseilles,
De Constantine,	Projans,	Brown Turkey,
Firenze,	Rubado,	Brunswick,
Houch de Bray,	Guigliano,	Reine Blanche,
Smyrna,	White Genoa,	White Marseilles.
White Ischia,	Wonderful,	

GRAPES.

At Baton Rouge, only by persistent spraying can the various fungus diseases be kept in check. By continuous use of the spray pump the following varieties have fruited regularly:

Amber,	Cynthiana,	Jacques,
Blood,	Delaware,	Merrimae,
Blanco,	Diamond,	Missouri Reising,
Black July,	Empire State,	Norton's Virginia,
Brighton,	Early Wine,	Niagara,
Catawba,	Herbemont,	Perkins,
Champion,	Ives,	Salem.

Recently varieties of hybrid scuppernongs have been received from T. V. Munson, Texas, and are now on trial.

ORANGES.

The oranges were all killed, both at Baton Rouge and Audubon Park in 1899. The Japanese varieties budded on trifoliata stock, which had successfully withstood a cold of 15 degrees Fahrenheit, readily succumbed to one of 6 degrees Fahrenheit, on the 13th of February, 1899.

At Audubon Park, another grove consisting of oranges and pomelos, has been planted. A goodly number of varieties of each are now growing, and last year considerable fruit obtained. In this orchard there are also over one hundred trees, obtained by crossing the varieties of sweet oranges with trifoliata. They have not yet fruited, but should a single tree produce an edible fruit, it will be used for reproduction of others by budding. They are, of course, quite hardy and withstand the severest cold of this climate. These trees were furnished by the United States Department of Agriculture, and hopes are entertained that from the large number at least one or more will furnish an edible fruit and furnish a basis for the introduction of a new variety capable of withstanding the freezes of the South.

MULBERRIES.

The Lampasas, Russian and Stubbs' varieties have been grown. The last is very prolific and most desirable, the fruit being large and delicious.

RASPBERRIES.

Raspberries are not successful. Trials with many varieties have shown their inability to withstand the heat of the summer.

BLACKBERRIES AND DEWBERRIES.

These are everywhere successful. The Wilson, Kittatinny, Min-

newaski, Ancient Briton and Early Harvest are the varieties of the former which have been tested.

The Manatee and Austin, two black varieties of dewberries, are very prolific and desirable. The white varieties, Coleman and Baden, are desirable only as novelties.

STRAWBERRIES.

Strawberries have been extensively grown at Baton Rouge and Calhoun, but to only a limited extent at Audubon Park.

One hundred and fifty-four varieties have been tested at Baton Rouge, and about one hundred at Calhoun. Careful records have been made of earliness, yields and quantity. It is useless to cumber these pages with such tables.

At Baton Rouge, the following varieties are recommended: Cloud, Michell's Early, Brandywine, Lady Thompson, John Little, Stephens and Excelsior.

Moore's Diamond, originated by Mr. Moore, of Hammond, has been found a desirable variety—prolific, large, solid berry of good texture and flavor.

At Calhoun, following varieties are recommended: Earliest, Howell's, Lady Thompson, Bismarck, Margaret, Haverland, Barton's, Staples' Anna Kennedy, Tennessee.

At Audubon Park, out of the limited number tried, the following are to be commended: Earliest, Lady Thompson and Tennessee.

GOUML.

The goulm bushes continue to bear enormous crops of fruit each year. As an ornamental, these plants deserve a high place among the shrubs, and its fruit too is eagerly sought by many.

JUJUBE.

This interesting fruit bore its first crop in the garden in 1899. It was thought that the freeze had killed it, but it came through unharmed, and is growing well.

NEW ORCHARDS.

At Baton Rouge a plat of several acres were planted in pear trees to test methods of root pruning, cultivation and treatment of the blight. Over 300 trees were set out early in 1899. The orchard is now being cultivated and observations made at short intervals and recorded. This orchard is intended to furnish information for those contemplating growing pears on a large scale for market. Results will ultimately be published.

At Calhoun, on account of the decay and failure of the old

orchard, a new orchard on a different part of the station and on different soil, was established in 1899. There were planted seventy-seven varieties of peaches, covering all the different types, sixty-five varieties of apples, thirty-four of plums, and twenty-two of pears.

This orchard has been carefully cultivated and the trees have made a good growth. It is expected that some of the peaches and plums will bear the coming season.