REPORT
Delta Branch Experiment Station
1922 and 1923

By
W. E. AYRES

MISSISSIPPI AGRICULTURAL EXPERIMENT STATION
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The Delta Section of Mississippi is comparatively small, but land values and taxes are high. This small area pays a very high percentage of the State taxes in proportion to its size. The soil is very fertile, naturally, and with present day drainage, sanitation, and good roads, no other section of the State, and no other area of similar extent in the United States presents such an array of agricultural opportunities. The almost limitless possibilities of this section are rapidly being recognized by its citizens, and by citizens of other sections. The Delta is rapidly waking up to the value of her soil as a wealth producer, and this wealth is being utilized more and more as time passes. Science is being applied to farming and the Delta is annually increasing the value of her farm products.

The Delta is small in area but exceedingly large in agricultural possibilities. The average annual value of the Delta cotton crop alone is above $60,000,000.00. By proper methods this value could soon be doubled and an abundance of other crops produced. The section will easily support twice as great a population and a much more intelligent class of labor.

Research is the source of much reliable agricultural information. This information has played a large part in guiding Delta planters in utilizing their soil and climatic resources. One of the greatest needs in the further development of the vast resources of the section, is the vigorous and active prosecution of experimental work, and the proper dissemination and utilization of sound and reliable data obtained through research.

The hearty co-operation and active participation of every citizen and agency in the use of Experiment Station results and in the financial support of the work are not only desirable but essential if the agricultural resources of the section are to be developed at a rapid rate. All citizens of the section are encouraged to use all Station results which will help make farming a more desirable and remunerative vocation.

Public Meetings—Delta planters have shown more interest in the Station during the biennium than ever before. More than 5000 visitors came to the Station during the summer of 1922, and the prospects are good for twice that many in 1923. Several of the Delta counties have annual days at the Station. The Cotton Co-operative Association has a mass meeting on the Station grounds annually. The meetings are all well attended. At the Association mass meeting in 1922 the attendance was 1,200 or more. On Coahoma County day 300 or 400 were present. There were more than 100 present on several other days. Several planters have indicated that they would bring 15 or 20 of their best tenants to the Station during the summer. Some tried the plan last year and found
it very satisfactory. In all probability more than 100 negroes will visit here this summer. From June 25 to September 30 from 10 to 75 persons visit the Station daily. During this period the time of one man is practically consumed by visiting farmers, and much of the time two are required to handle the crowds.

Visitors are free with favorable and unfavorable criticism—favorable toward the work, both quality and quantity done with funds available, and unfavorable toward the lack of funds with which to investigate so many problems. Hundreds have made special request that a budget large enough to more nearly meet the needs be asked for 1924-25. Several of our best men have indicated that the Station should spend at least 35 or 40 thousand dollars a year. The sentiment is such as to make trouble if a much larger appropriation than the Station has ever had is not asked. Committees are at work in several counties now to make this sentiment unanimous. It is doubtful if such enthusiasm for Experimental Work exists anywhere else in the country.

Improvements—No new buildings have been erected during the bennium, but the barn has been painted, about two miles of new fencing erected, an outside wall put on the first story of the seed house, and considerable repairs made on the tool sheds, the shop, and the garages.

On the east side of the Station there is a ditch which carries practically all of the surface water on the Station, as well as that from 500 to 1000 acres belonging to neighbors. This ditch had been neglected until it was filled up and grown-up to such an extent that the surface water stood on 60 to 100 acres of the Station from three to six hours after heavy rains. In the summer of 1922 the Station joined the neighbors in cleaning and enlarging this ditch enough to partially relieve the trouble, but much more work will be required to solve the problem.

During the past winter the Station lawn has been graded, drained, and planted with trees and shrubs. With proper care the front can, in a few years, be made beautiful. Nothing could add more to the attractiveness of the Station than can be added by proper care of the grounds. To combine utility and beauty, pecan trees have been used in the planting wherever consistent.

No fund was provided for improvements, and only these things have been done which were essential to good management and economy. Other work has been materially handicapped because of the necessity of doing the few things which have been done.

New Work—The following work was begun in the spring of 1923:

(1) Check row cultural work with cotton looking to the control of nut grass or coco.

(2) Cultural work with cotton to include different depths of cultivation, different dates of laying by, etc.

(3) Cultural work with corn to include different depths of cultivation, different dates of laying by, etc.
(4) Rates of seeding Fulghum and Red Rust Proof Oats.

(5) Miscellaneous legume and cover crop Nursery.

(6) Fall and Spring planting of various legumes in oats for summer hay crops.

(7) Residual effect of nitrogenous fertilizer on oats following fertilized corn.

(8) Tests of cotton fertilizers to include lime nitrate, acid phosphate, and mixed fertilizer. The above will be compared with nitrate of soda or tested in combination with nitrate.

**Planting Seed**—Probably 50% of Station maintenance is devoted to the development of better strains of field crops adapted to the locality. This part of the work has been very successful. Cotton bred at the Station is today worth more to the State annually than all Mississippi Experiment Stations have cost since they were established. Corn developed by the Station is more productive than other corns in the Delta section. Delta Station Rust Proof Oats have produced 70% more for the past three years than seed of the same variety bought commercially.

Experiments are never sacrificed or neglected for the sake of producing seed for sale, but all land unfit for experiments is used to increase outstanding productive strains of the various crops. All experiments in which seed is a constant factor are planted with seed which should be increased. All seed so increased, except enough corn and oats to feed Station livestock, is sold to Delta planters for planting purposes at reasonable prices.

More planting seed have been distributed during the present biennial period than ever before. Six hundred bushels of cotton seed, 625 bushels of corn (and 355 of Mosby corn by Mr. S. A. Brown, who co-operates with the Station in breeding Mosby), 360 bushels of oats, and 20 bushels of soy beans being sold in 1923 alone. This will permit the planting of 600 acres of cotton, 2,910 acres of corn, 180 acres of oats, and 120 acres of Laredo soy beans, or a total of 3,180 acres of farm crops with seed direct from the Station in 1923. If these seed are properly cared for and offered for sale in 1924, a very material part of the Delta acreage of the staple crops can be planted in 1925 with seed only two years from the Delta Station. The possible acreage in 1924 of Delta Station cotton should be augmented by the fact that all cotton seed sold were covered by a contract which safeguards their purity.

Delta Planters feel that it is almost criminal to feed oats and corn, which are very highly bred and very desirable for planting purposes, to Station livestock. This is a very unwise and expensive thing to do, but, until abundant funds are available or remedial legislation is passed, this will be necessary. If the Delta Station support bill were so written as to permit the use of the funds obtained from the sale of feed grains for seed purposes to pay labor to prepare such grains for seed and to replace
the feed lost through the sale of such seed there would be no excuse for feeding any grain suitable for seed purposes. Such a change in the wording of future bills would help to make the work of the Station more valuable to the State and would be true economy.

**CORN.**

With the exception of the new work with corn outlined above, corn experiments were continued along the same lines as outlined in the Director's 35th annual report.

Variety tests were failures in 1922 due to bad stands and damage by livestock belonging to neighbors, before maturity. The 1923 variety tests are very promising at this date.

Spacing tests have been conducted since 1920. In 1922 it was evident in dry weather that the 15 and 20 inch plots suffered much more than the thinner plots. Results and observations each year indicate that having too few plants is much better than having too many. The quality of the corn from the thin plots has always been much better than that from the thick ones. The corn from the very thick-spaced plots was very small and contained a great many worthless nubbins each year. The above experiments were not entirely satisfactory and are being repeated.

The information at hand, including experiments elsewhere, and close observation, indicates that corn is generally left too thick for best results. About 5,500 plants per acre is probably safest. This number is obtained by leaving one plant every 24 inches in 4 foot rows, or one every 27 inches in 3 ½ foot rows.

The practice of planting peas or soy or velvet beans in the corn is known to be a good one, and one that should be more universal than it is.

An experiment, conducted in 1921, repeated in 1922, and again in 1923, indicates that planting a legume in the corn reduces the corn yield, but that the combined value of the two crops is much greater than the corn alone. The enrichment of the soil is also an important consideration.

For buckshot and other heavy lands soy beans are best to plant in the corn. On loam and sandy land peas and velvet beans are probably as good. The addition of a legume to the corn field will make corn much more profitable.

Corn fertilizer work was begun in 1921. The soil is typical Deer Creek loam, which had been brought to a high state of cultivation by the use of legumes before the test was begun. Corn in 1922 followed cotton. The cotton in 1921 had identical fertilizer treatment, plot for plot, as the corn. These same plots are to be fertilized in the same way each year for at least five years.

**Sources of Nitrogen**—In planning this test in the spring of 1921 all materials which bade fair to offer commercial nitrogen for fertilizer purposes were considered. Since that time Calcium Nitrate, or Lime
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Nitrogen, is being offered Delta planters in commercial quantities. This material will be compared with other standard commercial nitrogenous fertilizers in 1923.

Results of 1922 show an increase of 15.9% for cotton seed meal, 25.4% for ammonium sulphate, 39.2% for nitrate of soda, and an increase of 24.4% for a mixture of nitrate and cotton seed meal. Average results of 1921-2, which are more reliable, show that ammonium sulphate increased the yield 18.1%, nitrate of soda 16.8%, cotton seed meal and nitrate 18.1%, and cotton seed meal 12.5%.

All materials were applied at such a rate as to add 15 pounds of nitrogen per acre. In considering these results the prevailing market price of the various materials must be considered.

Rates of Applying Nitrate of Soda—In 1922, 50 pounds of nitrate per acre increased the yield 5.2%; 100 pounds, 17.4%; 150 pounds, 30%; 200 pounds, 47.4%; 250 pounds, 68%; and 300 pounds, 72.4%.

The average results for two years show the following increases: 50 pounds of nitrate per acre increased the yield 3.6%; 100 pounds, 11.5%; 150 pounds, 22.4%; 200 pounds, 28.6%; 250 pounds, 36%; and 300 pounds increased the yield 37.1%.

In considering the results fertility of soil must be considered. The area on which these tests were made will yield approximately 40 bushels without fertilizer. On ordinary land the increase from fertilizer would, in all probability, have been much greater.

Time of Applying Nitrate of Soda—Results at the Delta Station and elsewhere indicate that nitrate is often applied too late for best results. Planting time seems a little early. It is probably best to apply the nitrate at the first cultivation or not later than the second. Early applications will probably show up to better advantage on thinner soil. On thin soil the writer would not hesitate to apply nitrate at planting time.

Corn breeding has been in progress since 1921. Results have been very satisfactory. Rows planted from selected ears often yield 50% more than the best field selected seed of the same variety. Sufficient seed has been distributed in 1923 to give the Delta a good start of high producing corn, but much more work is needed.

A very interesting strain of Cocke Prolific is being observed in the breeding work this year. This particular strain averaged 15 inches high on June 15, and the surrounding strains averaged 27 inches high in both series. Photographs have been made and the strain will be watched with a great deal of interest in the hope that a productive prolific type with dwarf plants has been found. It is also realized, however, that it is likely to prove worthless.

COTTON.

Cotton experiments made in 1922 were published in Bulletin No. 215. A discussion here is unnecessary.

The work of 1923 is being conducted along the same lines with the
additions noted above. The work is all in excellent condition at present. Better stands have been retained than in previous years except on one of the variety tests.

The test of check-row cotton looks practical for bad coco lands. Hoeing can be practically eliminated and stands can be retained. Several planters have expressed the opinion that this method will aid materially in solving the coco and hoeing problems.

Fertilizers show very plainly in advanced plant growth at this time. For the first time since the experiments were begun, cotton seed meal caused the cotton to die when very young, and all cotton seed meal plots had to be planted over.

Two new strains of Delfos are being increased. One, Delfos No. 911, is a selection from Delfos 6102, and has longer lint, larger bolls, shows more storm resistance, and has been a better yielder for three years than Delfos 6102. The other, Delfos 910, is a selection from Delfos 631. It has yielded considerably more, consistently, for three years, than its parent. Two or three tons of seed of each strain will be available for distribution in 1924 if nothing happens to the crop.

Oats—Oats receive little consideration in the Delta. Since a good crop of oats, and a hay crop of soy beans, clover, melilotus, or sorghum following, can be grown on the badly infested buckshot lands, this crop is undoubtedly one of the best feed crops for the section. The use of this sort of combination will release much labor for other lands from lands which have always been unprofitable in cultivated crops.

Variety tests have been made for three years. Average results of 1921 and 1922 were as follows: Hastings 100 bu., 61 bu., per acre; Ferguson 71, 59.7 bu.; Appler, 44 bu.; Fulghum, 40.6 bu.; and Dwarf Culberson, 25.9 bu., per acre. Yields of the 1922 test follow: Delta Station Red Rust Proof 56.1 bu. per acre; Commercial Red Rust Proof, 33.0 bu.; Hastings 100 bu. (Red Rust Proof), 52.1 bu.; Appler (Red Rust Proof), 51.1 bu.; Fulghum 708, 49.8 bu.; and Dwarf Culberson, 28.1. It will be noted that the best variety produced 100% more than the poorest, and that Commercial Red Rust Proof was outyielded by 70% by a selected strain. Results of 1923 are not available, since no thinning has been done, but Red Rust Proof strains will lead again by a very wide margin. It seems safe to recommend Ferguson 71, Hastings 100 bushel, or Appler, all of which are of the Red Rust Proof group, for general Delta planting.

All oats planted in 1922 were treated for smut by the dry formalin process with perfect success. A small area sown with untreated seed showed a loss of 12% in yield due to smut infection. Seed were not treated in 1923 and all fields were practically smut-free. This shows that seed treatment is not necessary every year if proper precautions are taken against infection.

Oat breeding work has been in progress since 1920. Several promising new strains were isolated in 1922, but 1923 comparisons have been...
made worthless by a storm which blew down all plots. More than 500 selections have been made in 1923 and a large nursery will be planted this fall.

Forage Crops—Tests were begun in 1922 looking toward solving the problem of the best crop to plant after oats, and the best variety of that crop. Comparative yields of the various crops planted broadcast, June 12, follow: Mammoth soy beans, 3,300 pounds of dry hay per acre; Whippoorwill peas, failure—killed by dry weather on buckshot soil; Mung beans, 2,730 pounds; Bush velvet beans, no stand; and Red Top Sorghum, 12,780 pounds of dry hay per acre. Sorghum produced much more hay than any other crop, but following these crops oats practically failed on the sorghum plots. Soil fertility must not be forgotten.

Yields of varieties of soy beans planted broadcast after oats, June 12, for hay, were as follows: Wilson, 4,100 lbs. of dry hay per acre; Virginia, 5,320 lbs.; Mammoth, 7,610 lbs.; Laredo, 5,360 lbs.; Barchett, 5,250 lbs.; Biloxi, 7,360 lbs.; and Otootan, 7,280 lbs. The large tonnage obtained from Mammoth and Biloxi is not as good as it looks on paper. At least 40% of it is woody stems, which are not edible. Virginia is also rather bad in this respect. The other varieties are vine and have small stems. They make hay of excellent quality. Barchett and Otootan are so late that they will fail to be ready to cut for hay by frost in early falls when planted after oats.

When planted in corn which was waist high, Otootan and Laredo soy beans made a good yield of forage and grain. Mammoth soy beans and Whippoorwill peas were failures under the same conditions.

Two acres of Laredo soy beans were planted on coco infested buckshot soil, for seed in 1922. The yield was 25 bushels of grain per acre and the threshed straw was fairly good for hay. Oats were planted after the soy beans and there is a perfect stand of volunteer soy beans on the land now, which bids fair to produce a good hay crop without further care than getting the oats off the land.

Yields of varieties of cowpeas planted broadcast for hay follow: Whippoorwill, 3,560 lbs.; New Era, 3,460 lbs.; Brabham, 3,220 lbs.; Groit, 2,960 lbs.; Victor, 3,440 lbs.; Clay, 3,060 lbs.; and Unknown, 3,940 lbs. of dry hay per acre. Until dry weather came the peas promised more hay than the soy beans, but the peas shed practically all of their leaves and quit growing—ripened prematurely during the hot, dry weather, and had to be cut early. The soy beans continued growth and matured a good crop of grain. The pea hay crop was not worth more than half as much as that of the soy bean, ton for ton. Acre for acre, the soy bean was worth practically four times as much as the pea hay.

Sorghum varieties ranked in yield in the order named: Groit, Seed Ribbon, Hastings (badly mixed but primarily Orange), Orange, Amber, and Red Top. Ripening dates were as follows: Red Top, Oct. 5;
Amber, Oct. 7; Orange, Oct. 15; Crookneck and Seeded Ribbon, Oct. 25. All varieties were planted June 19.

The stand of the various varieties of velvet beans was too poor for records to be of value, but doubtless they injured the corn less, pound for pound of forage and grain produced, than did either peas or soy beans.

In the fall of 1922 work was begun in an effort to determine the best crop to plant in oats for a summer hay crop without having to plow or disk the land after oats are harvested. Duplicate plots of Melilotus, Alsike Clover, Red Clover and Lespedeza were planted in the oats in both fall and spring. So far Alsike Clover and Lespedeza look best. All fall planted Melilotus winter killed, and the spring sown plots do not look promising.

Livestock—No livestock experiments have been in progress since the early spring of 1920. Enough sheep and hogs are kept to consume the waste. These are sold to the butcher.

Publications—The following bulletins have been published: No. 209, Alfalfa in the Delta, February 1922; No. 210, Vegetables and Truck for Home Use, March, 1922; No. 207, Nitrogenous Fertilizer Experiments, April, 1922; and No. 215, Cotton Experiments, 1922, January, 1923.

In April, 1922, posters were distributed which showed, graphically, results of cotton spacing experiments. Actual data were published on the same poster. At the same time in 1923, 2,500 posters showing both cotton spacing and fertilizer data, were published and distributed. The posters are more popular than any other publications issued by the Station. Several planters have said that the excellent stands of cotton both this year and in 1922 are largely due to the posters on cabins, barns, post offices, stores and bank windows throughout the section. Several men have expressed themselves as being willing to pay for them, personally, rather than do without them. This method of publication reaches the tenants. They are the only ones who must ultimately be reached if satisfied labor is to exist. The latter is necessary to successful farming.

Acknowledgments—The hearty co-operation of all employees; the constructive criticism, favorable comments, and hearty moral support of Delta Planters; the courtesy of the President, Director, and Secretary; and the splendid co-operation of all Delta County Agents and the administrative officers of the Extension Division, contributed materially to the wonderful success of the Station during the biennial period.

Respectfully submitted,

W. E. Ayres, 
Assistant Director in Charge.

Stoneville, Mississippi, June 30, 1923.
DELTA STATION NEEDS AND RECOMMENDATIONS.
FOR THE 1924-25 BIENNIAL PERIOD.

Hard times have hit the Delta Station. Most of its troubles are due to insufficient funds. Since 1920 the experimental area has been increased over 300%. The number of plots and experiments have been increased proportionately. The maintenance budget for 1922-23 is the same as for 1920-21. For 1922-23 nothing was allowed for improvements, whereas an improvement fund of $20,000.00 was used in 1920-21. The Station has made only a very small percentage of the necessary improvements and a fund for this purpose is an absolute necessity if the Station is to progress and meet the needs of the Section.

Since 1915 land values in the Delta have increased from 100 to 300%. The cost of producing a crop on the average Delta plantation has probably increased in nearly the same ratio. The funds of the Station are only 70% greater than in 1918-19. For this reason some very serious problems confront the Station.

Never in the history of the Station have the demands for results of research been so unprecedented. These demands come from Farmers, County Agents, Extension workers, Chambers of Commerce and business men individually. It is the chief business of the Station to furnish such data, but the supply is far short of the demand. However great this discrepancy, the work of the Station must slow down and fall far short of meeting present-day and future requirements unless appropriations are materially increased.

The Experiment Station requires labor which is more intelligent and more industrious than the average. For the sake of efficiency the Station should be in position to command plenty of the best common labor in the country, and a few skilled, intelligent workers for the most particular work. Instead of being able to do this the conditions of finances and quarters have made it necessary to take a limited quantity of the labor left after mills and the best plantations have met their requirements.

There is another serious feature of the situation. Able, well trained and experienced men and women are absolutely essential for scientific experimental work. Present funds will not permit the employment of a sufficient number of efficient workers. All classes in the Delta look to the Station for agricultural leadership. This can only come from an abundance of ability and experience. At least one other man assistant is needed, and a competent, well paid Secretary-Stenographer would be an invaluable addition to the Station staff.

The Delta has many pressing agricultural problems calling for experimentation and research, which the Station has either been unable to touch, or has only been able to deal with superficially because of lack of funds. Among these are farm machinery, rotation of crops, oats,
summer and winter legumes, corn culture, nut grass control or eradication, and local experiments.

Of all sections of the South the Delta area is best adapted to the use of improved farm implements. The Delta Station receives many inquiries concerning the practicability of various tractors, cultivators, and other farm machines. To date there have been no funds with which to test any machines except those absolutely essential to the conduct of ordinary Station operations. It would certainly be more economical for the Station to have funds with which to investigate various implements than for each individual farmer to take a chance and probably, if not surely, buy much poor and impractical equipment.

The Delta knows practically nothing about crop rotation, oats, corn growing, or legumes. Each year the soils are being depleted of plant food and humus. Feed bills are increasing while the labor supply and farm income per acre decreases. Some way to reduce the feed bill, increase per acre production and soil fertility, and to use fewer men and more farm machinery must be found. Delta Planters of the section are asking the Station to solve the problem. The Station has demonstrated during the period covered by this report that there are varieties of soy beans, viz. Laredo and Oootootan, which will make paying crops with little labor on lands which are entirely unprofitable in other crops. In 1923 yields of 30 to 50 bushels of oats per acre were produced in coco infested, low, tight buckshot soil following soy bean hay, and the land had no preparation whatever after the hay crop was removed. The grain drill was run over the soy bean stubble at a cost of less than $3.00 per acre for seed and labor.

A winter legume adapted to Delta farm practices would add much to the production of the section and reduce the annual bill for fertilizers by more than has been spent in maintaining the Delta Station since it was founded.

Practically all of the corn fed in the Delta area is imported. The freight bill paid annually by the planters would support corn investigation by the Station for several years to come. Certainly enough money to investigate cultural methods, develop strains of corn adapted to the alluvial area, and to demonstrate that feed can be produced more economically than it can be bought and transported, should be forthcoming. By proper use of such feed crops as corn, oats, soy beans, clover and alfalfa, the labor supply necessary to operate the plantations can be materially reduced, soil fertility increased, and the section made more nearly independent and self sustaining.

Coco or nut grass is one of the worst noxious grasses the country has ever seen. It is spreading very rapidly in the Delta. If some practical means of eradication or control is not found, in ten years there will be thousands of acres of Delta lands abandoned because of coco infestation. A practical method of eradication would be worth millions of dollars to
the Delta alone, not to mention other sections of the country. Ample funds should certainly be provided for extensive and intensive investigation of this problem.

There is now a great demand for local experiments with fertilizers and varieties of cotton. Some of this work is being conducted this year and a small amount was done in 1922. Probably this should be continued, but more closely supervised, for the sake of a closer contact between the Station and the average Delta citizen, and for data on various soil types and conditions.

Aside from the crying need for funds for maintenance of present work and beginning other much needed projects, many improvements of the Station property are essential to efficient work. The most pressing need of the Station is a gin and gin equipment. The necessity of ginning at a public gin is a distinct reflection on the Station and the State. All Delta Station Breeding and experimental cotton must be shipped to the A. & M. College to be ginned and the seed shipped back. Cotton seed which have cost the State 8 or 10 thousand dollars is shipped both ways annually. Fortunately none of this has ever been lost, but it is very risky. It is possible to wreck a train and lose it all. The probability of losing a few bags is very great. The loss of the original bag of Delfos would have been almost criminal, since it is now available in sufficient quantity to be worth, in increased yields to the Delta alone, several million dollars a year. Small gins to handle this material on the Station are essential.

Ginning the main crop of the Station at a public ginnery is expensive, to say nothing of the danger of gin-mixing pure strains of the high producing cottons from increase breeding plots. When this ginning is done, the entire Station crew has to go to the gin, and it is necessary to wait until custom ginning is practically over. In addition to this, regular ginning charges are paid, and many chances of losing the identity of important cottons are encountered. Complete gin equipment is badly needed and would add greatly to the safety and efficiency of the cotton investigations.

The great need for an auditorium in which to hold meetings is common knowledge in the Delta. In the summer of 1922 on Staple Cotton Association day more than a thousand people got two or three times while trying to hear talks in the open. The ladies of Leland had prepared lunch, and had it not been for the fact that Association officials acted quickly, and paid the entire bill, at least $600.00 worth of food would have been ruined by rain. (The tables were set and lunches served on paper plates. A hasty rain came up which would have spoiled practically all food had it been necessary to collect for each plate individually.)

Much more storage space is needed for farm machinery, and for sheaf oats between harvest and threshing time. Many farm implement
manufacturers would donate implements to the Station if ample storage space were provided. About two car loads of donated machinery are in use at the Station now, and one of the largest manufacturers of implements indicates a desire to send one or two cars of its latest output in the near future. The Station needs much more equipment but has almost as much as it can house until other buildings are erected. To meet all needs it seems that a two-story structure will not only be best adapted but decidedly the most economical type of structure. Rest rooms for both men and women should be provided on the first floor, and the remainder of the space beneath the auditorium used for storing machinery not in constant use. This can easily be constructed with a part of the sales funds if the assembly will consent.

The Station farm is comparatively well drained, but the construction of a few surface drains and deepening and widening the open ditch on the east side will greatly increase production and help to prevent the rapid spread of noxious grasses and weeds. On the Station farm is a partially wooded tract of low land. On it there is practically no timber of value even for firewood. It is primarily a boll weevil harbor and an eyesore. As soon as funds for labor are available it will be cleared, stumped, drained and utilized. It will then be an asset to the Station and the State rather than a liability, as at present.

The Station cabins are all very poor. It will soon be impossible to keep labor if three cabins are not built and the best old ones repaired. The negro quarters on the Station are by far the poorest in the community. The average good negro laborer today demands a good house. Something must be done on this point, and that quickly, if the experiments are to be handled with anything except the poorest negro labor. This would not only be inefficient but very dangerous, as is always true when there is any doubt about the reliability of results upon which conclusions are based.

Because of the recognized value of, and the great need for fundamental research, surely the State will not be miserly with the Delta's only State institution. The Delta pays more than one-fourth of the taxes of the State. Of the total yield of cotton in the State, from 40 to 55% of it is produced in the Delta. Delta cotton values comprise from 50 to 60% of the value of the Mississippi crop. Cottons bred at the Station are now worth 8 to 12 million dollars annually to the Delta alone, in increased yields over the best commercial varieties. Delta Station cottons are valuable to other sections of the State. Many of the valleys all over the State are being planted to Delfos and Express. Planters are willing to demand support for the Station, but surely the needs will be liberally and wisely provided for when they are properly presented.

In view of the needs the following budget should be doubled, but the condition of the State's finances has been considered, also:
ANNUAL BUDGET RECOMMENDED FOR 1924-25 BIENNium.

Salaries—

<table>
<thead>
<tr>
<th>Position</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant Director and Plant Breeder</td>
<td>$3,150.00</td>
</tr>
<tr>
<td>Assistant</td>
<td>$2,400.00</td>
</tr>
<tr>
<td>Assistant</td>
<td>$1,900.00</td>
</tr>
<tr>
<td>Foreman</td>
<td>$1,400.00</td>
</tr>
<tr>
<td>Secretary-Stenographer</td>
<td>$1,200.00</td>
</tr>
<tr>
<td><strong>Labor</strong></td>
<td>$8,400.00</td>
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</tbody>
</table>

Miscellaneous—

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mules</td>
<td>$500.00</td>
</tr>
<tr>
<td>Machinery and Tools</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>Material</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>Stamps and Stationery</td>
<td>$250.00</td>
</tr>
<tr>
<td>Publications</td>
<td>$600.00</td>
</tr>
<tr>
<td>Power, Heat and Light</td>
<td>$25.00</td>
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<tr>
<td>Travel</td>
<td>$250.00</td>
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<tr>
<td>Freight and Express</td>
<td>$175.00</td>
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<tr>
<td>Seed and Plants</td>
<td>$350.00</td>
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<tr>
<td>Fertilizers</td>
<td>$25.00</td>
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<tr>
<td>Library</td>
<td>$150.00</td>
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<tr>
<td>Furniture and Fixtures</td>
<td>$125.00</td>
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<tr>
<td>Sundries</td>
<td>$32.00</td>
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Improvements, 1924 Only—

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Gin and Gin Equipment</td>
<td>$7,500.00</td>
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<tr>
<td>Building and Repairing Cabins</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Auditorium and Tool House (from sales if allowed)</td>
<td>$10,000.00</td>
</tr>
</tbody>
</table>

Respectfully submitted,

W. E. Ayres,
Assistant Director in Charge.

Stoneville, Mississippi, June 30, 1923.