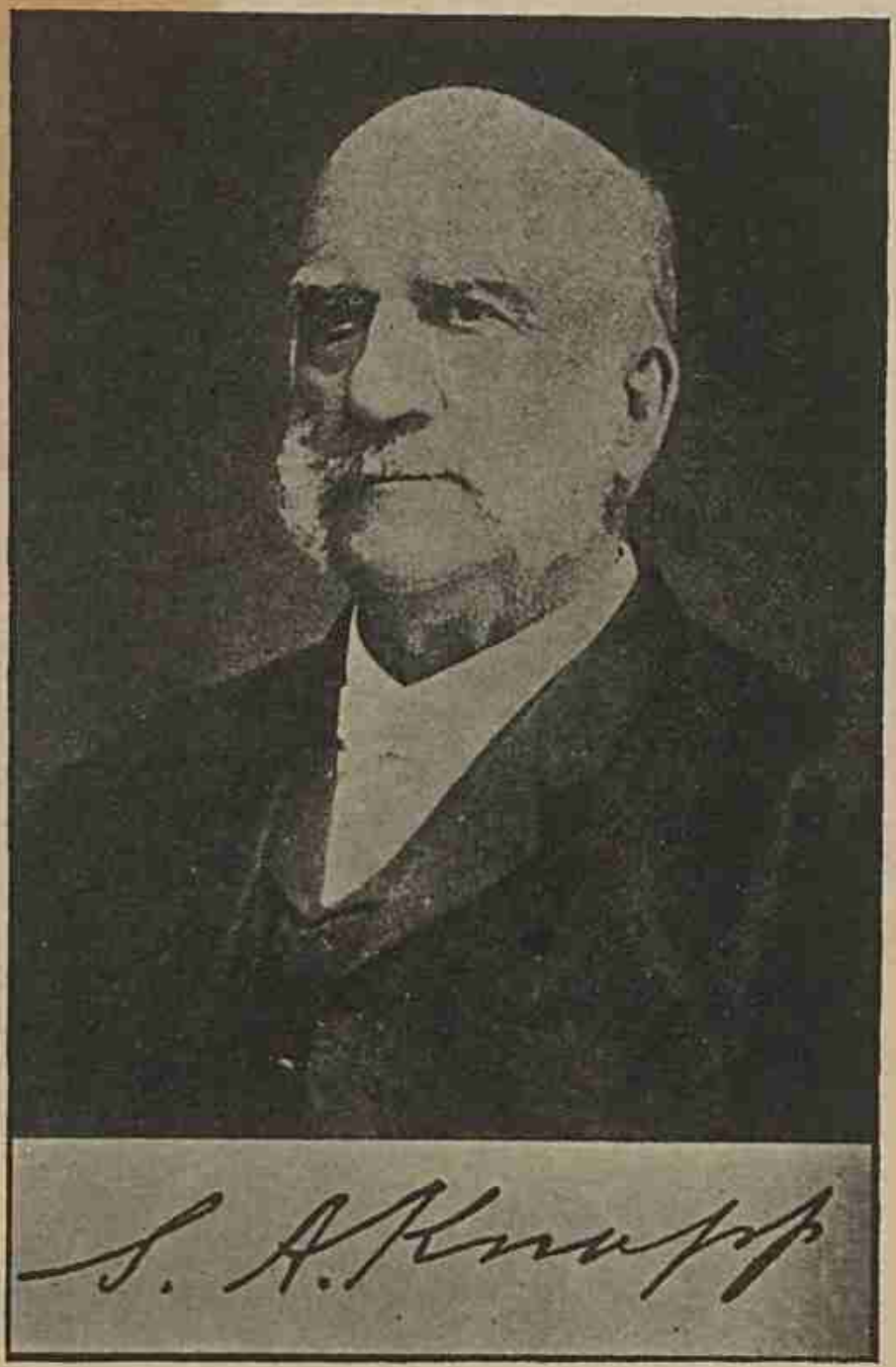
CLUB SONG

Written for the Agricultural and Home Economics Clubs of the North Carolina Extension Service by C. R. HUDSON, *State Agent*, Raleigh, N. C.

(SOUVENIR REPRINT)



DR. SEAMAN ASAHEL KNAPP
Born Essex County, New York, December 16, 1833;
died Washington, D. C., April 1, 1911.
The South's Great Benefactor.

CLUB SONG

(Tune: "Polly-Woll Doodle," etc.)

O, come on, now, join in a song
With much hilarity;
And we will show what we can grow
By brain celerity.
Hooray! Hooray! for brain celerity;
Its power is great, in any State,
To bring prosperity.

2

(*Corn Club*)

We'll grow the corn, within our State,
To furnish all we need;
Then we'll not buy at prices high,
But have a plenty feed.
Hooray! Hooray! We'll have abundant feed;
For if we toil on our good soil,
We'll have the corn we need.

3

(*Pig Club*)

Our pigs will grow into big hogs
On pastures where they roam;
So we won't buy side-meat so high,
But grow our pork at home.
Hooray! Hooray! Oh, we won't have to buy;
We'll grow fine hams to eat with yams,
For these will satisfy.

4

(*Poultry Club*)

Poultry and eggs are wholesome food
That have a rural charm;
So we'll live well and only sell
The surplus from the farm.
Hooray! Hooray! Oh, we shall all live well;
Poultry and eggs grow sturdy legs
That hold us for a spell.

5

(*Calf Club*)

Good grass will grow throughout our State,
On mountain, hill and lea;
And cows eat grass, while on they pass,
And chew at night, you see;
Hooray! Hooray! Our cows will pay us well;
For they'll supply what urbans buy,
And make our pockets swell.

6

(*Garden Club*)

A garden spot is our delight
To grow much good stuff in,
To make us strong and life prolong
To fourscore years and ten.
Hooray! Hooray! Veg-e-ta-bles are fine
To save us ills and doctors' pills
As we go down the line.

7

(*Diversification*)

With sheep and goats, and wheat and oats,
Potatoes, geese and rye;
Vetch, clover, peas, alfalfa, bees—
"Diversity" our cry.
Hooray! Hooray! The State will be our pride;
For we'll rotate, be up-to-date,
With crops diversified.

8

(*Cooperation*)

"Co-op-er-ate" is our motto,
Whether to buy or sell;
For a long pull and a strong pull
All together will tell.
Hooray! Hooray! Together all the while,
We'll surmount hills and pay our bills
With a bright, happy smile.

9

(*Results*)

So, with these things, we'll build us homes,
In our old State so grand;
We'll educate, emancipate,
And own our homes and land.
Hooray! Hooray! We shall be glad and free;
We'll build a State with people great,
Through brain celerity.

10

(*Gratitude*)

Then three cheers for that peerless sage,
Who taught us wisdom's ways;
We owe to him a diadem,
So ever sing his praise.
Hurrah! Hurrah For S. A. Knapp, Hooray!
Foremost he stands with "Ten Commands,"—
Hurrah! Hurrah for aye.

(For Ten Commandments of Agriculture, see last page)

The Ten Commandments of Agriculture

By DR. SEAMAN A. KNAPP

Originator and founder of the Farm and Home Demonstration Work and Boys' and Girls' Club Work (started in 1903)

"(1) Prepare a deep and thoroughly pulverized seed bed, well drained; break in the fall to a depth of 8, 10, or 12 inches, according to the soil, with implements that will not bring too much of the subsoil to the surface. (The foregoing depths should be reached gradually, if the field is broken with an ordinary turning plow. If a disk plow is used, it is safe to break to the above depths at once.)

"(2) Use seed of the best variety, intelligently selected and carefully stored.

"(3) In cultivated crops give the rows and the plants in the rows a space suited to the plant, the soil, and the climate.

"(4) Use intensive tillage during the growing period of the crops.

"(5) Secure a high content of humus in the soil by the use of legumes, barnyard manure, farm refuse, and commercial fertilizers.

"(6) Carry out a systematic crop rotation with a winter cover crop on Southern farms.

"(7) Accomplish more work in a day by using more horse power and better implements.

"(8) Increase the farm stock to the extent of utilizing all the waste products and idle lands of the farm.

"(9) Produce all the food required for the men and animals on the farm.

"(10) Keep an account of each farm product, in order to know from which the gain or loss arises."

Issued November 1, 1910.

United States Department of Agriculture,

OFFICE OF THE SECRETARY.—Circular No. 33.

THE MISSION OF COOPERATIVE DEMONSTRATION WORK IN THE SOUTH.[a]

It is always a pleasure to talk to a body of farmers, but it is doubly a pleasure to talk to the men who are so congenial and have so much at heart the lines of work that are going to accomplish so much. We have tried to think out the plans of the Demonstration Work thoughtfully and lay them along lines of practical utility; to form a substantial basis of evolution or revolution for changing the conditions of the common people, especially among our rural population. I see that you have caught the spirit of it and are endeavoring to carry out the plans under the conditions under which you labor.

There is no question in my mind but that the farmers of this country must have their lands tiled when close competition with the whole world has come and life is more strenuous than it is to-day. Tile drainage is the cure for a whole lot of difficulties. If you are well tiled, too much rain doesn't trouble you. I have watched successfully tiled fields; the farmer after a heavy rain could go right on the next morning and work them, while the farmer that was not tiled might be obliged to wait a week. Tile drainage is a perfect remedy for the washing of all the hills of the South, and the only perfect remedy. I have tiled hills so steep that a man could hardly go up and down, and never had a washing. Tiling will act as an air duct as well as a water duct, and in forcing the water down to the tile it makes little pores all through the soil, draws the water, passes the water off, and answers for airing the soil; and if you tile 30 inches deep it is equivalent almost to 30 inches of plowing. The greatest farm I know of in the world is in the Hawaiian Islands and it is plowed 30 inches. Get some man in your respective territories who can afford it to demonstrate the great value of tile drainage.

Also, take another proposition—that farming can not be successfully carried on in any country without live stock. I have noted how the nations, as the lands have advanced in price, have changed from tillage crops to grass crops. When I was a boy, three-fourths of England was under tillage. To-day less than one-fourth is under tillage, and the population has multiplied many fold. The same is true of Holland. It is almost entirely a grass country and lands are worth on an average $500 per acre. The same is true of Denmark. If it has been the experience of these

[a] An extempore address delivered by Dr. Seaman A. Knapp, of the Bureau of Plant Industry, to the agents of the Farmers' Cooperative Demonstration Work, Macon, Ga., September 16, 1910.

nations that as land advanced and life became more strenuous they turned toward grass, it seems that the same will follow in our case. In other words, they made up their minds that they could get more out of land from grass and live stock than they could by cultivating it. They only use the cultivated crop as a means of rotation, but the main crop is the grass crop. What are they doing with their grass crops? In Holland and Denmark it is the dairy problem, and they have been able to develop a cow that is almost a perfect machine for manufacturing those fine hays and fine pasture grasses into high-priced butter and cheese. Take their registered stock and those animals will average to produce for the farmer 1,000 per cent net profit more than the ordinary cow; that is tenfold.

Mark you, speaking of the better thing: It takes about 19 pounds of clover a day to sustain a 1,000-pound animal. No profit; simply a case of keeping the machinery running and at the end of a year you have simply sustained life. Your profit lies in getting that animal to eat some more. If it can eat and digest 20 pounds you make a profit on 1 pound. The 19 pounds is waste to run the machinery. Now, the animal that can consume and digest and assimilate 21 pounds is worth twice as much as the animal that can consume 20, because with the animal that consumes 20 pounds you make a profit on 1 pound and with the animal that consumes 21 pounds you make a profit on 2 pounds, and so it goes on in proportion. If you get the animal to consume 29 pounds it is worth ten times as much as the animal that consumes only 19 pounds. Profit lies in the best. This is true in every way; whether in the case of a horse, or a cow, or a citizen, the profit is in the best.

Then comes this great grass crop, and we don't know how to make grasses and we don't know how to make hay. Hay is baked to death. Animals eat grass because it tastes good. If you will cure your hays, your pea vines, your alfalfa, and even your wild grasses, if cut at the proper time and cured so as not to be sun baked, which takes away the flavor, you will have a great product and will have to feed very little grain. A mule isn't apt to overeat with grain. We must use more intelligence in feeding a horse. Keeping stock in the future must be more of a problem of pasture and hay than of grain. Grain is too strong as a main food and too expensive. It fevers the system, and therefore we must have grasses and luscious pastures—well drained, not old sour grass, but an abundant pasturage, sweet and nutritive, so that it is a pie counter to the animal. We must do more intelligent farming.

Modern farming is going to require more power on the farm. The time when a man could get a living with the hoe has passed. Labor has become too scarce and too high priced and the demand of living now is of too high a grade. Every step in upward human progress costs something. If it's a better road, it costs. If it's a better school, a better living, or better clothing, it is going to cost more money. Let us relegate the hoe to the past and take something in its place that can accomplish more work in a day. It means, furthermore, that no State can get along with one mule to two laborers. We must add more horse power or more mule power; more power on the farm, more brains, and fewer men. As labor advances—and I hope it will advance, because its advance means better living for the common

man—then we will simply substitute power and will profit by it. That is the problem that has been worked out in the mechanical world. All we paid a good carpenter when I was a boy was 75 cents a day and an extra carpenter $1 a day. To-day the same class of man will claim from $4 to $6 a day. He does more work. When I was a boy we sawed from the rough board with a handsaw all the planks and planed them with a jack plane. To-day that is all done by machinery and all the carpenter does is to fit and nail up, and we can afford to pay a higher price. He can do more work in a day. Where we worked 1 acre two years ago we want to be able to work 3 acres this year and by and by want to be able to work 10 acres where we worked 1 acre a few years ago. Why is it that the Northwest, with its lower range of crop values per acre, prospers? If the farmers there get from $10 to $15 or $20 an acre out of their high-priced land, they think they have done very well. Why are they richer than you men, who can get $75 to $100 out of an acre of cotton? It is because one man works an enormously greater number of acres. It isn't what you get per acre, but the aggregate values that you can get out of the acres you till.

They do everything by machinery and they use from four to eight times the horsepower and a great deal larger horses, and they don't want even a walking plow, because the man who walks will get tired in the afternoon and want to stop and he won't do as much by 33 per cent as if you let him ride, and he won't work as many rows. We must accomplish a great amount of plowing in a day. The harrow must become universal, and the disk plow and the smoothing harrow, and by and by the gasoline engine will come in and we will do three to four times what we now do. I have a friend in the great rice fields that plows and disks and harrows and seeds 20 acres in a day himself. That is getting along. This can't be done at all times, because this heavy machinery packs the land too much unless the land is in just the right condition, but I am simply speaking of the trend of things. Mr. Collier stated that he had but one horse in the county fit for breeding purposes. This was true in all the great Northwest a few years ago. Now it is full of good horses. In Virginia they have had a drought and are willing to sell their horses cheaper than they would a few years ago, particularly on the eastern slope of the Alleghenies. Some horse dealers have lowered their prices for first-class horses nearly 50 per cent. Suppose you were to start out to get a first-class cow, such a cow as will produce 1,000 pounds of butter in a year, how many such cows could you get? You can find but a few in the United States. And you may take the whole animal kingdom, even up to men, and you will find only a small per cent first class. We want to change these things and it is your problem to help change them, beginning with the lower orders, but ultimately to change the men so that greatness shall be common among the common people of our country. How are you going to do it? The old system of education was to educate the top.

In old days they thought if a few men held all the money it was a good thing and the masses should remain poor, but they changed their plan. Certainly within my recollection it was believed in this country and in other countries that the common people should not be educated at public expense and that common schools should not be

universal. This has changed, but it has not yet percolated through the brain of lots of people that prosperity must be universal. We must teach that doctrine—a universal prosperity based on intelligent agriculture and thrift, so that the average man is able to be a great man and an independent man, and on that hangs not only our prosperity, but our national existence and our liberties. It is on the thrift, prosperity, and independence of the average man that our citizenship is based. Now, where must we start? In thinking out this problem the main point is to start at the bottom. In attempting to raise the condition of the colored man we frequently start too high up and in talking of the higher progress talk right over his head. When I talk to a negro citizen I never talk about the better civilization, but about a better chicken, a better pig, a whitewashed house. Of the 150 negro schools, seminaries, colleges, etc., in the South three years ago very few were carrying out fully, to my mind, their proper mission. Many of them were trying to teach Latin and Greek, which would be of very little use to most of them. I know of a colored section where there were 6,000 colored people settled during the war and a school was started in 1864. They have been carrying on that school and it is costing $26,000 a year. The managers of the school came to me year before last and said: "The condition of those people is worse than it was when we took hold of it. Go down there and see what the matter is." I found they were teaching every child that knew anything at all to get away from that country. They were not influencing the people on the farm or helping them at all. They were cultivating their lands with little steers that weighed about 500 pounds. Their sole income was from cotton, and I have it from the cotton ginners that the average income of each family in that section was only $30 a year. I went to the gentleman that held the purse strings and told him what the difficulty was. I said: "You are doing a great wrong. Why don't you get at the people themselves and teach them something practical?" In fact, we were all wrong about it. Until we took hold of the Demonstration Work the idea was prevalent that a man on the farm did not need any teaching. Now we realize that the problems which are up to-day and need solution should be presented to him; and it is just as much the part of our obligation in our great system of education to establish lines of study for the man on the farm as for the boy that is developing to be the future lawyer, the future doctor, or the future preacher. It is also realized that the great force that readjusts the world originates in the home. Home conditions will ultimately mold the man's life.

I once knew a Chinaman who came to the United States. He spent ten years in being educated, graduated at Yale with honor and appeared to be entirely changed in his civilization. He went back to China, married a Chinese wife, and reverted to the original Chinese type. The home eventually controls the viewpoint of a man; and you may do all that you are a mind to in schools, but unless you reach in and get hold of that home and change its conditions you are nullifying the uplift of the school. We are reaching for the home, and I want to tell you how we propose to get hold of that home. We started with the average man by teaching deeper plowing and better preparation of the soil. The plant must have moisture. If there is

too much moisture the food is thin. Then comes a dry spell and it doesn't get enough to eat because there isn't moisture enough, and so we have one-third and one-fourth and one-sixteenth of a crop when a full crop is right down there if you will only use these instructions. Humus will hold 181 per cent of moisture; common sand will hold 25 per cent and dries right up. You want to hold the moisture so the plant can feed right along regularly. And the great cry of the land is more humus and deeper plowing, so that it will hold more moisture. In the proper seed bed the root will be cooler than the top. Shallow cultivation is simply to leave that home of the roots undisturbed. It also keeps up a dust mulch. With a good seed bed, proper cultivation of the soil, the best seed, and the best methods of shallow cultivation, you have made the crop. These will give wealth to the people, and they mean an advance perhaps of four or five or six hundred million or a billion of money to the South. Then, too, our boys' corn-club work dovetails right in with our general plan of the uplift of the home. If the home lacks culture and the boy fails to get the right training, there is a weak spot in his character that no future teaching can help very much.

The matter of paramount importance in the world is the readjustment of the home. It is the greatest problem with which we have to deal, because it is the most delicate and most difficult of all problems. We want to reach the home through the boys and the teaching of agriculture. What is agriculture? There is not very much book lore in it. I have defined it in this way: There is about one-eighth of it that is science; about three-eighths that is art, and there's about one-half of it that's business. The teacher can't teach business and can't very well teach art, and yet the greatest problem on the farm is how to do the work rapidly enough to make a living profit. Teachers may teach agriculture in a certain way and to a certain extent, but the main object of the teacher should be to interest the pupil in the study of agriculture. Thus we have devised these boys' corn clubs so that the boys may become interested in doing things. The club does more than that. It teaches him to do one thing and to do it well. It is going to take all the force that we can get to accomplish this work, and it is a question of political economy to find how we are going to get the funds, and it will be necessary to call to our help all the forces for the betterment of men and to cooperate with them. One of the living forces in the world is the teacher, and what I said about teaching agriculture doesn't apply to other things. I regard the teacher as next to the mother as a force in the land. But I am not going to concede that the teachers can do everything. Get the teacher to organize the club and work the machinery. We simply help the teacher. If the teacher is a woman, show her the general principles and explain to her; any woman in the country could be trained in twenty-four hours how to conduct boys' corn clubs. The teachers don't understand what they are expected to teach; they think they must go through a course in agriculture. Limit the work to just a few things and do them well is the practical plan. As Americans we spread too much. In the supervision of the field plats the teacher can't be all about. You agents can, and you should cooperate with the teacher and have a perfect understanding of the principles of a good crop of corn. Show the teacher

how to organize, and have her do it. Your value lies not in what you can do but in what you can get the other person to do. Consequently you want that teacher to become an enthusiast; then go with that teacher out to the field and criticise that corn in the presence of the teacher, the child, and the parent, and pretty soon that teacher will be a local force for you. It's your business to teach the teacher as well as the people. In that way pretty soon we will have a goodly band of teachers that will teach some real agriculture.

Don't make another mistake. Don't classify little boys as men. Group boys with boys.

I believe in making a boy a manly boy. I believe in his attending the public schools, because one of the great things for a man is to know how to struggle with men and stand up for his own opinions and carry his own points. In other words, life is a battle and the man who hasn't met his equals and overcome them when he was a boy is a weakling all his life. I have seen namby-pamby boys, tied to their mother's apron strings and taught Latin and Greek, sent out into the world. Poor little puny things! Why, I would rather take a street boy that can knock his way through the crowd; I would rather risk him in the battle of life than that namby-pamby boy. We don't let our boys and girls learn how to manage. Let the boy do, even if he makes mistakes. There is great need of farm managers to-day, but men have not been trained to manage the business side of a farm. There is need of captains of industry in every community. You can't make them through books. Power of the brain depends on the hardness of the muscle. Softening of the brain is the result of softening of the muscle. Teach the boys how to regulate their forces, how to meet shocks, and have supreme courage to face the world anywhere. Having learned to be a farmer, he should know machinery. The costliest animal in the world is a man or a woman. They cost in treasure, cost in care, cost in human anxiety. Yet we shorten human life by neglect. The average age or span of life and a possible one are wide apart. My ideal of education is that of practical sense, leadership. Get that sense into a boy and he will take up farming, and if he knows a few fundamental principles he will apply the rest. Teach him the importance of knowing a few things well, of system and thrift. Education really means a leading out; we make it a stuffing in. Try to teach the child to lay by his knowledge on a certain shelf in the brain ready for use. Not one person in a thousand has put his thoughts or facts in a definite brain niche, so that when he wants that knowledge he can reach out and take that knowledge and use it. Farmers must be orderly. Farms are simply an outward indication of what kind of brains the farmer has. There is no such thing as poor land. It is the poor brain of a thoughtless man on top of the supposedly poor soil. No matter how poor the land appears, it can be made profitable if the farmer knows how and has the will power to carry it out. Try this system of education that makes men as well as farmers.

Reverting to the colony that was in such poor condition, the first lesson I gave them was to raise corn and make molasses, because a negro if he has corn and molasses can live, and you must make him an independent liver before you can make him a good citizen. So we taught them to make molasses and grow corn. It took with them

and stuck. Like the old lady that thanked the Lord for everything. She had a large family and they all died; she thanked the Lord and said they were probably better off in that world than in this. She had a large property, which was lost, and she thanked the Lord, because she said it would probably have ruined them to have so much wealth. She had a fine set of teeth and lost the most of them; she thanked the Lord that she had two, and they hit. The molasses mill hit. I had some letters just the other day telling in glowing terms of the success of this practical work to those people. Get down to where people can understand, touch the bottom, and lift.

You might think the object of our work is to increase a farmer's income, to teach him to double his crop; but if you stop there and think that is the sole object of our work you have not seen the whole there is in it. There is a higher mission than that in connection with the Demonstration Work. We begin with the increase of the crop because that is the basis for all possible future prosperity. The farmer must be made independent. You must keep a man's nose away from the grindstone, for if it is constantly at the grindstone he can't see anything else, can't be elevated; and so we take up the question in the South of corn and cotton. We try to teach the farmer greater thrift, to raise his own provisions, to can his vegetables, so that he may have them the year round; that he must put this money into a better home, and so percolating and drifting through his home there will be a broadening element and there will be a gradual uplift of conditions, and as there is an uplift and improvement of conditions the men themselves will become a little broader and a little straighter and a little firmer, till by and by this home society where he must live, this rural society, will be a great dominating force in the land, and we shall become a pattern, not only to our own country, but to all countries, showing how a great and free people were able to readjust their conditions.

I believe that when the common people come to their own they will be able to hold their own. Every man should be so stalwart that he is a model of defense and defiance to the world. Our project would have been sufficiently ambitious if we had said: "We will increase the wealth and give the people greater earning power." But other things that we teach incidentally are that we must improve the moral tone, the moral condition, and the whole prosperity of the people, to try to turn all avenues of the wealth that we create into the proper channels so as to create a better people. But even this is not quite enough. We may have wealth and social prosperity and home comforts and not be a high-minded, stalwart, courageous, and brave people. We must teach that. We have nearly 500 agents traveling in the United States. Take this same high standard and begin at the bottom to teach things that will be helpful to the people. We go out and help people, and especially help the man on the farm. The moment you begin to help a man you begin to get his confidence. You begin to prove up and pretty soon he becomes a disciple and he preaches to another man, and so the doctrine spreads.

I want you to feel to-day that you have hold of one of the greatest lines of social uplift and development and greatness that exist. You may have conceived that something else was greater; that if you could use a facile pen like Washington Irving or some of the great

writers of the age that would be the acme of your ambition; or you may have thought that if you were able to speak with the wonderful expression of Demosthenes, or Burke, or Henry, that would be the summit of your hopes. But you are beginning at the bottom to influence the masses of mankind, and ultimately those masses always control the destinies of a country. If you allow their practices to sink lower and lower the country must ultimately drop to a lower level in its moral, political, and religious tone, and we go down to degradation and infamy as a nation; but if we begin at the bottom and plant human action upon the rock of high principles, with right cultivation of the soil, right living for the common people, and comforts everywhere, and make wealth and prosperity all through the rural districts, the people will lend their support and all civilization will rise higher and higher, and we shall climb to the summit of human excellence and become a beacon light to all nations of the world. I do not glory in the wealth of a few, but rejoice in the general distribution of wealth and prosperity for the common people.

It will require a great deal of stern, earnest effort when you are out alone on your way. It is going to require a good deal of patience, but demonstration will do it. If you prove up on your own farm and on your neighbors' farms they will accept it. They can't resist facts. Another thing, don't publish what you are going to do. Simply tell what you have done. Achieve all you can. Always let your county know it. Call attention to the crop and everything helpful. And so we will march along under divine guidance and gradually we will change the whole condition. These Southern States rightfully should be the richest States in the land. They have the greatest crop-producing power. They control the clothing of the world almost absolutely. We have been raising cotton and selling it and buying everything else. That practice never made a people rich. If we will produce everything that we consume, our own butter, cheese, poultry, as well as horses, and let our cotton be a cash crop, we will own the factories, we will own the banks, we will be a factor in the policy of the country and in the control of the world.

S. A. KNAPP,
Special Agent in Charge of
Farmers' Cooperative Demonstration Work.

Approved:
JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *September 30, 1910.*

[Cir. 33]

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"I know of no pursuit in which more real and important service can be rendered to any country than by improving its agriculture and its breed of useful animals."
—GEORGE WASHINGTON.

Knapp Memorial Committee

KNAPP AGRICULTURAL DAY

The 148,000 teachers and the 7,000,000 pupils of the South are being urged by their educational and agricultural leaders to assemble 3,000,000 farmers, their families and friends, in the 89,000 school houses on November 27th for an hour, in order to survey and review their agricultural resources and achievements, and to express their appreciation of the services of one of their great benefactors. Agriculture is worthy of this consideration, for the farmers of the nation have this year produced ten billion dollars' worth of crops to feed and clothe nearly 100,000,000 people here, with a surplus for other nations.

Knapp Agricultural Day is the official designation. The South wishes to honor the memory of Dr. S. A. Knapp as the founder of the Demonstration Work and the Boys' and Girls' Clubs. This is fitting, because 100,000 demonstrators are making larger crops on their farms and Corn Club boys are attracting world-wide attention by growing more than 225 bushels on one acre at low cost. The indications are that several of the 75,000 boys will this year break all records. It is fitting, because 25,000 girls, in the harvest season, are filling pantries with wholesome food and selling the surplus. It is a duty, because Dr. Knapp taught a new method in agriculture and the lessons must be more widely impressed and unfailingly transmitted. Representatives of England, Russia, Brazil, South Africa, Siam and Argentina have come to learn them. It is high time for American schools to take the lead in these ideas.

What vast possibilities loom up, if the people of the whole South will annually focus their thoughts on agriculture and country life for just one hour! It is hoped that the observance will grow into a custom and that an Agricultural Day will become an annual feature of all the schools.

Such a Day can include in its exercises a survey of all the activities which trace directly to the farmer: crops, trees, birds, nature, the children of the country and their proper equipment! Surely the celebration of an Agricultural Day has possibilities enough to make it the greatest occasion of the year. It could be made to render untold service, not only in the schools of the South but of the whole Nation. And the city child is

coming to need such a survey of agricultural matters even more than the country child; the private school pupil needs it quite as much as the public school pupil.

A double significance will attach to the Day this year. In connection with the program of country life it is planned to commemorate the life and services of Dr. Seaman A. Knapp. His teachings are universally known and followed throughout the South and their value is everywhere gratefully acknowledged. Among the men of recent years who have contributed ideas of vital worth to the educational development of the South, he stands out prominently. His contribution was not merely to our material wealth. But the larger returns our farmers are getting from their labor, time, and money, and the great agricultural awakening now in progress are emphatically due to his intelligence, teachings, and demonstrations. It is appropriate, therefore, that his influence should be perpetuated and made operative through the activities of the Knapp Farm and School of Country Life to be established at Nashville and in connection with George Peabody College for Teachers. It is highly appropriate that this should be done mainly through small contributions. How much better that a multitude of nickels and dimes and dollars shall establish this public-service institution for the entire South than to ask a few men to give the whole sum.

When $150,000 is collected for the farm and school building $250,000 will be added for endowment of the School of Country Life by the General Education Board. No other such institution exists. It will start out with the purpose of reaching and helping every school and farm in the South. This institution will be a laboratory, a clearing house, and an assembling place for agricultural and educational workers. Eventually it will have demonstration schools in each state and county teaching its lessons. It will be a working, living memorial, but in a conspicuous place will also appear a life-sized statue of Dr. Knapp.

The state and county superintendents of education are taking the lead in this movement. It will be a worthy tribute to a worthy man. The name of each contributor will be kept as a grateful record.

Suggested Program for Knapp Agricultural Day

November 27th, 1912, or the nearest convenient date.

1. Songs, by the audience.
2. How the Bible teaches agriculture, by an invited minister.
3. How Dr. Seaman A. Knapp prepared himself for great service, by a boy.
4. What Dr. Knapp taught, quotations by class of pupils.
5. Song or recitation.
6. How the Demonstration Work was organized and conducted, by a demonstration agent or other leading citizen.
7. How Dr. Knapp's work helped this community, this state, and the South, by three boys.
8. How I grew my crop, by a Corn Club boy.
9. What I did with my vegetables and fruits, by three girls.
10. The strength, beauty, and truth of Nature: Selections from the great poets and lovers of the country, by a class of pupils.
11. The best farm crops for this community, and why, by several pupils; display and judging of products in school exhibit.
12. How to express our appreciation of Dr. Knapp's great services and perpetuate his influence; collecting contributions, pledges.

HINTS AND MATERIAL FOR KNAPP AGRICULTURAL DAY EXERCISES

1. All the neighborhood should be assembled. If needful, let the pupils write invitations and copy programs to be sent out to everybody. One large program illustrated by colored drawings might be made and placed in the assembly room, where the whole audience can see and follow easily.

   The exercises should give some part to every person present, and should appeal to the eye as well as to the ear. A period of music will bind the audience together; encourage the singing of familiar songs: State Song, America, some of the noble hymns, or other pieces in which all can join heartily.

2. Readings from the Bible at the opening of the exercises by an invited minister. One or more passages like the following might be used responsively: Deuteronomy XVI, 13–17; Ecclesiastes XI; Psalm XXIII, L, LXV, CIV; Isaiah XXXV; Matthew VI, 19–34; Mark IV, 1–20; VIII, 14–21.

3. A biographical sketch of Dr. Knapp could be read by one of the advanced pupils, or a sketch could be prepared and read by such pupil. The different periods of Dr. Knapp's life or the different aspects of the service he rendered to the agriculture of the state and nation might be treated separately in short essays by several pupils. It might also be well to include in one essay some of the achievements of other agricultural leaders.

4. Pointed sayings and apt quotations from the writings and speeches of Dr. Knapp and of other agricultural leaders might be given by a group of pupils. Let ten, for example, stand and each quote in turn one or more important statements worth remembering.

5. A joyous song or a spirited recitation, or a combination of the two, could be brought in at this place in the program; or these features could be interspersed so as to divide the exercises into three parts.

6. A leading farmer or other citizen could make a short speech on the great benefit of Dr. Knapp's agricultural teachings. An account of successful experiments and crops in the neighborhood could be used effectively. The results on nearby demonstration farms, explained either by some citizen or a demonstration agent, would bring home concretely to everybody the value of the Demonstration Work. The names of noted workers, particularly those who have helped the community practically and concretely, will prove helpful.

7. Many forms of practical exercises can be carried out by groups of pupils to show in a definite way how Dr. Knapp's influence and that of other leaders was exerted. Some examples are here suggested:

   (*a*) Let five boys stand together and each in turn give one of five lessons learned about combatting the cotton boll weevil, and still standing let them give five points in the successful growing of cotton;

   (*b*) Let a group of boys stand and give in turn one of a number of important facts about yields of corn and at least five points in the successful growing of corn;

   (*c*) Let a group of girls stand together and each in turn give one of five definite ways in which the country life movement has helped the women on the farm: Tomato clubs, canning work, help for mothers, improvement at home through success of farm, social improvement through better roads and schools and closer community interests.

8. The smaller pupils can be used to make an attractive feature. Let them sing a song or give some simple dramatized poem. Certain portions of Longfellow's Hiawatha lend themselves well to this treatment.

9. Essays based on actual experience in growing crops or adding to home comforts can be easily secured: How I grew my crop, by a boy; What I did with my vegetables and fruits, by a girl; How I laid out and cultivated my flower gar-

den, by a girl; etc. Prizes might be offered for the best essays, which could be put into the form of booklets illustrated by original drawings or by pictures pasted in.

10. Let several of the pupils read selections from the great nature poems and masterpieces of prose; and have some one with a good voice, the teacher or other good interpreter of literature, render some impressive passage calculated to uplift and to inspire with a love for nature.

11. The results of experience in the community and the ideas gathered from reading agricultural books and journals could be used in a debate between two teams of boys or of the older people: Resolved, That wheat, corn, and clover are the best crops for this community; Resolved, That cotton and oats are the best crops for this community; Resolved, That the soil of this community is not suited to the growing of cotton alone; Resolved, that oats should be substituted for wheat in this county; etc.

    Exhibit of products. Encourage the bringing of some specimen of product or handiwork. Appoint committees of pupils to receive and arrange these contributions in an attractive display. Members of Boys' and Girls' Clubs can bring selected seed corn, canned and preserved vegetables, etc. A harvest home procession or tableaux could be arranged, in which the corn, wheat, cotton, cane, pumpkins, fowls, apples, vegetables, etc., are carried by the pupils, with appropriate songs or simple costume. Judging contests can be had in connection with exhibit; presentation in turn of a specimen of a farm or home product by each man, woman, and child present; these gifts might be sold at auction and the proceeds devoted to some worthy purpose. Circumstances must, of course, govern these details in each locality.

12. Outdoor events. Simple field sports, if the weather permits, can be made to afford much wholesome amusement. And merriment can be combined with improving school grounds: working bees on school premises for one hour; planting trees, hardy shrubs, vines, etc.

    It is not expected that any one school can or will wish to carry out the entire program outlined above. The features best suited to individual cases can be selected, or entirely new ones substituted in their places.

SOME HEROES OF AGRICULTURE.

Wilbur Olin Atwater (1844–1907).—It was largely through Dr. Atwater's efforts that the first state agricultural experiment station in the United States was organized. The station came into existence in Connecticut in 1875, with Dr. Atwater as its first director, a position which he held for 14 years. The establishment of this station was followed in 1887 by the so-called Hatch Act of Congress, which made possible the founding of such a station in every state and territory. Dr. Atwater especially investigated the means by which plants get nitrogen out of the air, and gave much profound study to the nutritive values of various products.

These stations have produced vast savings and equally vast increases in the yield of farm crops. Pests have been combatted, reduced, exterminated; farming methods, new varieties of plants and animals, rural economies and cooperation are being improved every year.

Stephen M. Babcock (1843–).—As agricultural and chief chemist at the University of Wisconsin, Dr. Babcock has applied the research of his science so as to place his state among the foremost in agricultural wealth, and his institution has become a model of service to a whole commonwealth.

The Babcock tester for butter-fat in milk has revolutionized dairying. When the unprofitable cow is discovered, a whole chain of inquiries is started: better feeding may be needed, gentler treatment, new dairy methods, or a different breed; a separate account with each cow becomes possible and necessary; and often it is found that the

only remedy is a new cow of better breed. The beauty of it all is that any child can make the test, and thus the school and farm cooperate.

LUTHER BURBANK (1849–).—A constant improvement upon Nature has been Mr. Burbank's life-work. Some of the most wonderful results which he has obtained by scientific breeding and crossing of plants are: a Wickson plum as large as a turkey's egg; the plum-cot, which combines the taste and appearance of the plum with those of the apricot; the "shasta daisy," which has several rows of petals and produces flowers four inches across; a calla lily three feet in circumference and another one only an inch in diameter; black roses, and an amaryllis as big as a football. In addition, Mr. Burbank has made very many practical improvements on the potato, the plum, the walnut, chestnut, and many kinds of flowers. He has also "invented" several new kinds of berries, by ingeniously crossing a number of varieties from all over the world.

On Mr. Burbank's estate in California as many as 80,000 lilies are in full bloom at the same time. "No horticulturist ever worked on so vast a scale nor in so scientific a manner as Mr. Burbank." He is still busily engaged in producing new fruits, flowers and vegetables to nourish the bodies and please the senses of all humanity. The Burbank potato has qualities which have already added millions of dollars to the value of the crop without increase of labor and under the same hard conditions of drouth, etc.

DAVID DICKSON (1809–1885).—Known as "the first millionaire farmer of the South," developed many improvements in the agricultural practice of that section, in addition to perfecting a number of farm implements. Starting at the age of 35 with $25,000 which he had made in business, he bought 266 acres of land in Georgia and by the application of business principles he increased the productivity of the soil manyfold. He devised the method of breaking the land deep and cultivating shallow, using the so-called Dickson formula as a fertilizer. He practiced seed selection and developed the first prolific variety of cotton, known as Dickson's cluster. He was also inventor of the Dickson sweep, a plow adapted for sandy soil and which at the same time lessened the number of furrows necessary in cultivating a crop. Mr. Dickson also wrote "David Dickson's System of Farming," a work which has done much to improve agricultural methods.

THE SERVICES OF A GREAT MAN AND THE APPRECIATION OF A GREAT PEOPLE

A BRIEF SKETCH OF THE LIFE AND WORK OF DR. SEAMAN A. KNAPP

Dr. SEAMAN A. KNAPP was born December 16, 1833, in Essex County, New York, and died in Washington, D. C., April 1, 1911.

Spent his boyhood on his father's farm.

Entered Troy Conference Seminary as a youth.

Graduated from Union College, Schenectady, New York, with distinguished honors, at the age of twenty-three.

Married Maria E. Hotchkiss in August of the same year.

Soon became Professor and Associate President of Troy Conference Seminary, and later President of Ripley College in Vermont.

Moved to Vinton, Iowa, at thirty-two and settled on a farm.

Served five years as President of Iowa School for Blind.

Organized and edited the "Western Stock Journal and Farmer."

In 1879 elected Professor of Agriculture at the Iowa State College.

Became President of this college in 1884.

At the age of fifty-three Dr. Knapp resigned the presidency of the college and moved to Lake Charles, La.

Developed rice industry in Louisiana and Texas.

Conducted demonstrations in rice growing and diversified farming for benefit of native farmers and immigrants.

In 1898 was authorized by Secretary Wilson of the U. S. Department of Agriculture, to visit China, Japan and the Philippines to make rice investigations.

Made second trip to the Orient and to Europe in 1901.

Sent next to Porto Rico to report on agricultural resources and possibilities.

In 1903 inaugurated Demonstration Work to fight the Mexican cotton boll weevil.

From 1903 to 1911 extended Demonstration Work throughout the whole South.

Seaman A. Knapp showed such aptitude and ambition as a small boy that his boyhood indicated what his manhood might be. At ten years of age he read Addison, Macaulay and Irving, and repeated what he had read to his mother and sister, in order to acquire a good vocabulary, clearness of style and the mastery of pure English. He said that even at that age he looked forward to the time when he might, through the spoken and written word, influence and lead mankind. He took advantage of such schools as were available in that early day in the country districts of New York, but he attributed a large measure of his success to the training and influence of his mother and an older sister.

In the first part of the nineteenth century small boys in the country districts of New York State did not have many opportunities for recreation in the way of games and sports. Little Seaman Knapp got most of his recreation by change of work. He was fond of cattle, horses and other animals on the farm. It was great sport for him to go on his favorite horse to the country store, for the purpose of securing some needed articles for his mother and for the home. There was not much money in circulation in that country either, so it was a matter of barter. Doubtless, he drove many a good bargain and had impressed upon his youthful mind the importance of thrift and economy.

A high school boy and a high school girl made the acquaintance of each other at the Troy Conference Seminary in 1852. They became sweethearts. They were married four years later just after both had graduated, and they continued as sweethearts and boon companions for fifty-four years. Mrs. Knapp took a personal interest and aided greatly in all of the work which Dr. Knapp did.

As a young man he had an ambition to found a great college. He was having much success as a teacher and school administrator, with Mrs. Knapp as his best assistant. A wrenched knee and failing health caused him to give up school work and take the advice of Horace Greeley, namely, "Go West, young man, and grow up with the country." Doubtless, the teachings of Horace Greeley, through the *New York Tribune*, had an influence on his life in other ways about this time. A public speaker in introducing him a few years ago, without knowing his early history, said that he was a combination of Socrates, Horace Greeley and Gladstone.

On the farm in Iowa he bred Shorthorn cattle and Berkshire hogs. He brought heavy draft horses to his community and helped organize the first live stock association in that state. Improved implements and labor saving devices were used on that farm and he developed the best seed and used improved methods of cultivation. With it all he regained his health and vigor. At this time he met a leading farmer of Iowa named James Wilson, and together they worked for agricultural reform in their adopted state. This co-worker succeeded Dr. Knapp later as professor in the Iowa State College and when farmer Wilson became Secretary of Agriculture of the United States, Dr. Knapp became one of his most trusted and valued assistants. During the sojourn in Iowa Dr. Knapp was called to manage several lines of work, all of which were good training for the greater work yet to be done. For five years he had charge of the State School for the blind. When his church at Vinton had no pastor he preached and taught the gospel for two years. He established a farm paper. There were few such papers in the country at that time. He, with others, conducted an agricultural campaign. The first course in agriculture in the Iowa College was organ-

ized and the graduation of the first class took place during his incumbency as professor and president.

Another crisis in Dr. Knapp's life came about this time. His health gave way under a severe attack of rheumatism. A board of physicians said he must give up college work and that he had only a few months to live. His reply was that he would accept their advice in regard to giving up the college work, but not in the matter of giving up his life. Turning his face to the sunny South he organized a great development company, bought a million acres of land in southwest Louisiana and sent invitations all over the northwest, "Come South, young men, and grow up with the country." Several thousand came. For many years he had believed that the South was destined for a wonderful future. He said, "Here is a people of pure Anglo-Saxon stock, energetic but conservative, without much admixture of foreign blood. These people should be the conservators of the best American traditions. Here is a productive soil, delightful climate and long growing seasons." In conversation with Chancellor Barrow, of the University of Georgia, once, these points were being stressed. Chancellor Barrow was impressed with the earnestness and optimism of the speaker, but remembering the difficulties and struggles of the Southern people he could not quite see how the South was to become the garden spot of the world, so he asked Dr. Knapp for a reason for the faith that was in him. Dr. Knapp's reply was, "Because the germinating power of the South is five times as great as that of any other part of the country." Chancellor Barrow says that he has thought about this reply a hundred times over, and that it is one of the most complete and satisfying answers he ever heard. He said that Dr. Knapp had absolutely gone to the bottom of the question.

The Farmers' Cooperative Demonstration Work was started in a small way in 1903. Dr. Knapp visited one small farm near Terrell, Texas, about twice a month and directed the operations there. Neighboring farmers met him in field meetings. At the close of the year he had proved that cotton could be grown in the face of the boll weevil, and was urged to extend his teachings and his methods throughout the whole country devastated by the pest. The next year, with funds furnished by Congress and by local business men, he appointed a few agents and began to organize different counties in Texas. The work soon attracted the attention of the country. Congress enlarged its appropriation, local aid was increased and the work was extended to Louisiana and Mississippi. About this time the General Education Board of New York asked to be allowed to appropriate money for similar work in other cotton states. In a few short years this great work had covered the entire South, had a force of a thousand agents, an enrolment of one hundred thousand farmers, seventy-five thousand boys in the Corn Clubs, and twenty-five thousand girls in the Canning Clubs. Every state in the South began to show an increase in the average corn production per acre, as well as other crops, and Southern Corn Club boys attracted the attention of the world by producing more than two hundred bushels of corn to the acre at low cost. Girls, too, demonstrated practical, scientific work in garden and home. During the year of his death, Russia, Brazil, England, South Africa and Argentina sent representatives to this country to study the Demonstration Work. Sir Horace Plunkett, the great Irish reformer, came for the same purpose, and at the request of the King of Siam, Dr. Knapp sent one of his agents to take charge of agricultural matters in that country.

Mrs. Knapp expressed the belief that all of her husband's career had been providentially guided as a preparation for the great work that he did in his closing years. Dr. Buttrick summed it up by saying, "Seventy years of preparation for seven years of work." A leading Southerner spoke of him as "Teacher, farmer, philosopher and statesman." Dr. Walter H. Page said of the Demonstration Work, that "It is the greatest single piece of constructive educational work in this age or any age." Forrest Crissey called him "The missionary bishop of American agriculture."

Immediately following Dr. Knapp's death numerous suggestions arose throughout the South in regard to a memorial in his honor. It was argued that we are prompt to build monuments and pay tribute to the heroes of war, and why not to a hero in the arts of peace? Dr. Knapp's work and teachings made it well nigh impossible to erect a monument of cold marble or dead bronze. It was felt that there must be a living memorial. A committee was organized with representatives from every Southern state. After careful deliberation it was decided to erect a Knapp School and to purchase and equip a Knapp Farm. The General Education Board of New York gave $250,000 to endow the Knapp School of Country Life in connection with the Peabody College at Nashville. The Memorial Committee has undertaken to raise $150,000 for the building and for the farm. No such institution has ever been planned before in the history of the world. This is to be a Demonstration Farm and a Demonstration School.

It is fitting that this memorial shall be unique. The service was distinctive. Such a service merits, and will receive, the appreciation of a grateful and generous people. It brought the resources of the South to the attention of the world in a new light; but better still, it brought comfort and joy to thousands where poverty and gloom had prevailed. It made the education of children possible where ignorance must, perforce, have held sway. It brought better instruction and renewed hope to men and women whose training had been neglected. A leading thinker has said that his plan constitutes one of the greatest systems of adult training ever devised. Dr. Knapp loved the South and was a citizen thereof for a quarter of a century. It was his chosen home in his mature years. He had admired its people for the chivalry, courtesy, and high sense of honor prevailing among them. He had sympathized with them during their hardships and struggles. Dr. Knapp was a benefactor to mankind and his works do follow him. The sentiment which actuated him and those who worked with him and for him is best expressed in his own words:

"The power which transformed the humble fishermen of Galilee into mighty apostles of truth is ever present and can be used as effectively to-day in any good cause as when the Son of God turned His footsteps from Judea's capital and spoke to the wayside children of poverty." —O. B. Martin.

Justin S. Morrill (1810–1898).—The Land-Grant College Act, signed by President Lincoln in 1862, was the work of Mr. Morrill, who at the time was a congressman from Vermont. This act gave to each state a certain amount of land, the proceeds from the sale of which were to be used in colleges of agriculture and the mechanic arts, "without excluding other scientific and classical studies." Mr. Morrill was also the author of the bill approved August 30, 1890, for the greater endowment of these colleges. There are now forty-eight colleges in the United States established under these acts.

Louis Pasteur (1821–1895).—This great French chemist made the wonderful discovery that there are vegetables which prey on animals, just as animals prey upon vegetables. These flesh-eating plants which are known as bacteria, float in our blood and cells, and though they are so exceedingly small that it takes a very strong microscope to see them at all, at the same time they make up in numbers and in appetite for what they lack in size. Dr. Pasteur also found that there are good bacteria and harmful ones, and that the harmful kinds could be so weakened that when introduced into one's system they could do no ill, but on the contrary would preserve one from the attacks of the more powerful bacteria. On these discoveries of Pasteur rest in large measure the science and art of modern medicine.

With the knowledge he thus gained, Pasteur himself was able to end the silk-worm plague in France, cure chicken cholera and the deadly disease, anthrax, in cattle, and to perfect an almost infallible treatment for hydrophobia, or rabies. It is said of him that he added more to the wealth of his country than both France and Prussia together wasted in the bloody war which they fought in 1870–71.

ISAAC NEWTON (1800–1867).—As the first Commissioner of Agriculture, Mr. Newton laid the foundations for the great Agricultural Department as it exists to-day. Upon its creation in 1862 the Government's agricultural bureau was merely a subdivision of the Patent Office; but, administered on the policy formulated by Mr. Newton, it rapidly increased in power and importance. At last, in the presidency of Benjamin Harrison, it was finally raised to the rank of an executive branch of the Government, with its secretary assuming a seat in the Cabinet.

JAMES WILSON (1835–).—It has been under the administration of Mr. Wilson that the United States Department of Agriculture has experienced its greatest growth, until to-day it comprises the greatest academy of scientists ever assembled. Mr. Wilson has been Secretary of Agriculture since 1897, thus establishing the record of holding a cabinet portfolio longer than any other department head. Before his appointment as secretary, Mr. Wilson was director of the Iowa Agricultural Experiment Station, and professor of Agriculture at Iowa State Agricultural College.

KNAPP EPIGRAMS: QUOTATIONS FROM WRITINGS AND SPEECHES OF DR. S. A. KNAPP

"The greatest of all acquisitions is common sense."

"A prosperous, intelligent and contented rural population is, therefore, essential to our national perpetuity."

"A patent to land is a title to nobility, a right to sovereignty."

"A great nation is not the outgrowth of a few men of genius, but the superlative worth of a great common people."

"It is impossible to impress upon any one that there is dignity in residing upon a farm with impoverished soil, dilapidated buildings, and an environment of ignorance."

"The income of the farm can be increased from three- to five-fold by the use of improved methods."

"Double the crop to the acre and halve the cost."

"More power and less hand-work."

"Increase the earning capacity of country toilers."

"No nation can be great without thrift."

"Training is the great item which fashions a race."

"The world's most important school is the home and small farm."

"The public school teacher's mission is to make a great common people and thus readjust the map of the world."

"You can cause the soil to become more responsive to the touch of industry and the harvest more abundant to meet the measure of a larger hope."

"The common toiler needs an education that leads to easier bread."

"The basis of the better rural life is greater earning capacity of the farmer."

"It appears to be a philosophy of the Southern people to let money slip through their fingers without sticking."

"Let it be the high privilege of this great and free people to establish a republic where rural pride is equal to civic pride, where men of the most refined taste and culture select the rural villa, and where the wealth that comes from the soil finds its greatest return in developing and perfecting the great domain of nature which God has given to us as an everlasting estate."

"The demonstration work may be regarded as a system of adult education given to the farmer upon his farm by means of object lessons in the soil, prepared under his observation and generally by his own hand."

"Any race betterment to be of permanent value must be a betterment of the masses."

"An idle saint only differs from an idle sinner in a coat of paint and direction."

He was teacher, farmer, philosopher & statesman

"The greatest failure as a world force is the man who knows so much that he lives in universal doubt, injecting a modifying clause into every assertion and ending the problems of life with an interrogation point."

"In general, it is not the man who knows the most who is most successful, but the man who imparts an implicit belief in his message."

"Agriculture in most sections consists simply in a series of motions inherited from Adam."

"This learning agriculture (which is a compound of the following ingredients—one-eighth science, three-eighths art, and one-half business methods) out of a book is like reading up on the handsaw and jackplane and hiring out for a carpenter."

"These mechanic farmers now reside in a town or city, live out of a canned garden and milk a tin cow."

"The great battles of the future will be industrial."

"We are now prepared for the accomplishment of what we have so earnestly sought, the placing of rural life upon a plane of profit, of honor, and power."

"The least worthy monument to a man is a granite block or a marble shaft. They represent the dead man's money and the kindness of friends. The true monument is what the man has accomplished in life. It may be a better gate, or house, or farm, or factory; put his name on it and let it stand for him."

800 PER CENT BIGGER PROFITS FOR THE SOUTHERN FARMER

"I estimate that there is a possible 800 per cent increase in the productive power of the farm laborer in the average Southern state, and I distribute the gain as follows:

"300 per cent to the use of more and better mules and farm machinery;

"200 per cent to the production of more and better stock;

"150 per cent to a rotation of crops and better tillage;

" 50 per cent to better drainage;

" 50 per cent to seed of higher vitality, thoroughbred and carefully selected;

" 50 per cent to the abundant use of legumes and the use of more economic plants for feeding stock."

THE TEN COMMANDMENTS OF AGRICULTURE

"(1) Prepare a deep and thoroughly pulverized seed bed, well drained; break in the fall to a depth of 8, 10, or 12 inches, according to the soil, with implements that will not bring too much of the subsoil to the surface. (The foregoing depths should be reached gradually, if the field is broken with an ordinary turning plow. If a disk plow is used, it is safe to break to the above depths at once.)

"(2) Use seed of the best variety, intelligently selected and carefully stored.

"(3) In cultivated crops give the rows and the plants in the rows a space suited to the plant, the soil, and the climate.

"(4) Use intensive tillage during the growing period of the crops.

"(5) Secure a high content of humus in the soil by the use of legumes, barnyard manure, farm refuse, and commercial fertilizers.

"(6) Carry out a systematic crop rotation with a winter cover crop on Southern farms.

"(7) Accomplish more work in a day by using more horse power and better implements.

"(8) Increase the farm stock to the extent of utilizing all the waste products and idle lands of the farm.

"(9) Produce all the food required for the men and animals on the farm.

"(10) Keep an account of each farm product, in order to know from which the gain or loss arises."

EXPERIENCE AGREES WITH THEORY

"No principle in agriculture has been more thoroughly demonstrated than the value of a deep, thoroughly pulverized seed bed.

"The Romans plowed on an average 9 inches deep—always three times for a crop and in stiff lands nine times. They did not call 3 inches 'plowing'; it was only 'scarifying.'

"The Flemish farmers were the first to follow the better lines of agriculture after the Dark Ages. They devoted their efforts to three main points: (1) The frequent and deep pulverization of the soil, (2) the accumulation of manure, and (3) the destruction of weeds."

TWO VIEWPOINTS

"The Farmers' Cooperative Demonstration Work may be regarded as a method of increasing farm crops and as logically the first step toward a true uplift, or it may be considered a system of rural education for boys and adults by which a readjustment of country life can be effected and placed upon a higher plane of profit, comfort, culture, influence, and power.

"Because the first feature of this demonstration work is to show the farmer how he may more than double his crop at a reduced cost of production, it has been regarded by some solely as a method of increasing farm crops by applying scientific principles to the problem. This would be of great value to the world and would stand as a sufficient justification for the efforts put forth and the expenditures involved, but such a conception would fail to convey the broader purpose of this work.

"There is much knowledge applicable and helpful to husbandry that is annually worked out and made available by the scientists in the United States Department of Agriculture and in the state experiment stations and by individual farmers upon their farms, which is sufficient to readjust agriculture and place it upon a basis of greater profit, to reconstruct the rural home, and to give to country life an attraction, a dignity, and a potential influence it has never received. This body of knowledge can not be conveyed and delivered by a written message to the people in such a way that they will accept and adopt it. This can only be done by personal appeal and ocular demonstrations. This is the mission of the Farmers' Cooperative Demonstration Work, and it has justified its claims by the results.

"It is noteworthy that the sciences adopted the demonstration method of instruction long since. The chemist and the physicist require their students to work out their problems in the laboratory, the doctor and surgeon must practice in the hospital, and the mechanical engineer must show efficiency in the shop to complete his education. The Farmers' Cooperative Demonstration Work seeks to apply the same scientific methods to farmers by requiring them to work out their problems in the soil and obtain the answer in the crib. The soil is the farmers' laboratory.

"The demonstration method of reaching and influencing the men on the farms is destined ultimately to be adopted by most civilized nations as a part of a great system of rural education."

COMMENTS FROM THE U. S. DEPARTMENT OF AGRICULTURE

"When the cattle-fever tick is destroyed in the Southern States the country will get much more meat from that section and the producing of it will build up the farms there."

"Every country in the world that has diseased plants that can not be sold at home can ship them to us. This results in great loss. The chestnut disease here is an illustration."

"We are sending explorers to the ends of the earth for new plants—and getting them."

"When a foreign insect invades, our scientists seek its enemy where it came from. The natural enemy of the boll weevil was an ant that could not endure our winters, but the native ant is getting busy."

"The object lesson in agriculture is the best teacher; we had 60,000 of them at work last year."

"The consumer pays a dollar for food; the farmer gets less than fifty cents for it. Who gets the rest?"

"The Department of Agriculture has had success in the Southern States through object lessons in the fields, where the best Southern farmers in their counties were the instructors. This method should be organized in all the states along lines of greatest necessity."

"The Southern farm boy is showing the way to grow more of all crops on an acre."

"Educate the farmer's boy toward a more valuable life on the farm."

"Uplift the farm home through the education of the farmer's daughter toward greater usefulness and attractiveness in the farm home."

"There is great promise in the fact that whole classes of graduates of agricultural colleges go back to the farms, having learned how to make them profitable."

—*Secretary James Wilson, in Year Book, 1911.*

COUNTRY LIFE IN PROSE AND POETRY

"The great rise of the small farmer in the Southern States during the last twenty years becomes the notable circumstance of the period, in comparison with which noisier events signify nothing. One only has to remember, particularly here in America, whatever crop we hope to reap in the future—whether it be a crop of poems, of paintings, of symphonies, of constitutional safeguard, of virtuous behaviors, of religious exaltation—we have got to bring it out of the ground with palpable plows and with plain farmer's forethought, in order to see that a vital revolution in the farming economy of the South, if it is actually occurring, is necessarily carrying with it all future Southern politics and Southern relations and Southern art, and that, therefore, such an agricultural change is the one substantial fact upon which any really new South can be predicated." —*Sidney Lanier.*

"The cotter can produce a more beautiful tree, if he love it, than the millionaire can require his hired slave to produce. Roses and honeysuckles and the old-fashioned pinks are democratic. The rudest home on the rocks out there may be a very bower of beauty. Your gospel comes to the rich man hard pressed with business cares, and bids him find a new source of rest and joy. It comes to the poor man bowed down under severe daily toil and teaches the same lesson. It gives to both a truer conception of life and happiness. The merchant prince with stately mansion richly furnished, driven to his business in a shining carriage drawn by glossy horses, liveried coachman on the box, is an object of envy. How about this farmer prince whom I am about to describe? A cosy white cottage embowered in roses in the midst of a pretty yard. The cottage is clean and simple within and there are evidences of a love of books and music and art. In the meadow sleek and stately cattle drink at the limpid brook. Young lambkins skip from bank to bank or troop away to their bleating dams. The young corn is full of sap and grew so much last night that you can begin to hear the rustle of the rich green leaves. The apples are reddening in the orchard and you can hear the quarrel of the woodpeckers over the first ripe cherries. The sweet smell of the red clover comes floating over the field and you can hear the hum of the bees at their joyous task. The farmer is hitching a pair of strong, contented horses to the mowing machine, for the clover must be cut to-day. His brow is not so drawn as that of the merchant prince, and he is whistling to himself in an undertone. Why should not he also be envied, and is this life less wholesome and worthy than that? Maybe, after all, he would not be willing to exchange all with the merchant prince."—*President Bryan, of the Washington Agricultural College.*

"And though we should be grateful for good houses, there is, after all, no house like God's out-of-doors." —*R. L. Stevenson.*

"Above, the clear sky was full of stars, the sky a lovely night blue. It was a time when, if ever it will, the soul reigns, and the coarse, rude acts of day are forgotten in the aspirations of the inmost mind.

"The night was calm—still; it was in no haste to do anything—it had nothing it needed to do. To be is enough for the stars." —*Richard Jeffries.*

"And lo! in a flash of crimson splendor, with blazing scarlet clouds running before his chariot and heralding his majestic approach, God's sun rises upon the world."
—*W. M. Thackeray.*

"The simplicity of winter has a deep moral. The return of nature, after such a career of splendor and prodigality, to habits so simple and austere, is not lost either upon the head or the heart. It is the philosopher coming back from the banquet and the wine to a cup of water and a crust of bread." —*John Burroughs.*

The year's at the spring
And day's at the morn,
Morning's at seven,
The hillside's dew-pearled;
The lark's on the wing;
The snail's on the thorn;
God's in his heaven,
All's right with the world.
—*Robert Browning.*

THE RAINBOW

My heart leaps up when I behold
A rainbow in the sky;
So was it when my life began,
So is it now I am a man,
So be it when I shall grow old,
Or let me die!
The Child is father of the Man;
And I could wish my days to be
Bound each to each by natural piety.
—*William Wordsworth.*

A TEACHER'S CREED

"I believe in boys and girls, the men and women of a great to-morrow; that whatsoever the boy soweth the man shall reap. I believe in the curse of ignorance, in the efficacy of schools, in the dignity of teaching, and in the joy of serving another. I believe in wisdom as revealed in human lives, as well as in the pages of a printed book; in lessons taught not so much by precept as by example; in ability to work with the hands as well as to think with the head; in everything that makes life large and lovely. I believe in beauty in the schoolroom, in the home, in daily life, and out of doors. I believe in laughter, in love, in all ideals and distant hopes that lure us on. I believe that every hour of every day we receive a just reward for all we are and all we do. I believe in the present and its opportunities, in the future and its promises, and in the divine joy of living. Amen. —*Edwin Osgood Grover.*

THE HOUSE BY THE SIDE OF THE ROAD

There are hermit souls that live withdrawn
In the peace of their self-content;
There are souls, like stars, that dwell apart,
In a fellowless firmament;
There are pioneer souls that blaze their paths
Where highways never ran;
But let me live by the side of the road
And be a friend to man.

Let me live in a house by the side of the road
Where the race of men go by—
The men who are good and the men who are bad,
As good or as bad as I.
I would not sit in the scorner's seat,
Or hurl the cynic's ban;
Let me live in a house by the side of the road
And be a friend to man.

I know there are brook-gladdened meadows ahead
And mountains of wearisome height;
That the road passes on through the long afternoon
And stretches away to the night.
But still I rejoice when the travelers rejoice,
And weep with the strangers that moan,
Nor live in my house by the side of the road
Like a man who dwells alone.

Let me live in a house by the side of the road
Where the race of men go by—
They are good, they are bad, they are weak, they are strong,
Wise, foolish—so am I.
Then why should I sit on the scorner's seat,
Or hurl the cynic's ban?
Let me live in a house by the side of the road
And be a friend to man. —*Sam Walter Foss.*

WE THANK THEE

For flowers that bloom about our feet;
For tender grass, so fresh, so sweet;
For song of bird and hum of bee;
For all things fair we hear or see,
Father in heaven, we thank Thee!

For blue of stream and blue of sky;
For pleasant shade of branches high;
For fragrant air and cooling breeze;
For beauty of the blooming trees,
Father in heaven, we thank Thee!

—*Ralph Waldo Emerson.*

THE CALF-PATH

A calf walked home as good calves should,
But made a trail all bent askew,
A crooked trail, as all calves do.
Since then three hundred years have fled
And I infer the calf is dead.

But still he left behind his trail,
And thereby hangs my mortal tale.
The trail was taken up next day
By a lone dog that passed that way,
And then a wise bell-wether sheep
Pursued the trail o'er vale and steep;
And drew the flock behind him, too,
As good bell-wethers always do.
And from that day, o'er hill and glade
Through those old woods a path was made.

And many men wound in and out,
And dodged and turned and bent about,
And uttered words of righteous wrath
Because 'twas such a crooked path;
But still they followed—do not laugh—
The first migrations of that calf,
And through the winding wood-way stalked,
Because he wobbled when he walked.

This forest path became a lane
That bent and turned and turned again;
This crooked lane became a road,
Where many a poor horse with his load
Toiled on beneath the burning sun,
And traveled some three miles in one.
And thus a century and a half
They trod the footsteps of that calf.

The years passed on in swiftness fleet
The road became a village street;
And this, before men were aware,
A city's crowded thoroughfare.
And soon the central street was this
Of a renowned metropolis!
And men two centuries and a half
Trod in the footsteps of that calf.

Each day a hundred thousand rout
Followed the zigzag calf about,
And o'er his crooked journey went
The traffic of a continent.
A hundred thousand men were led
By one calf near three centuries dead.
They followed still his crooked way,
And lost one hundred years a day;
For thus such reverence is lent
To well-established precedent.

A moral lesson this might teach
Were I ordained and called to preach;
For men are prone to go it blind
Along the calf-paths of the mind,
And work away from sun to sun
To do what other men have done.
They follow in the beaten track
And out and in and forth and back,
And still their devious course pursue,
To keep the path that others do.
They keep the path a sacred groove,
Along which all their lives they move;
But how the wise old wood-gods laugh,
Who saw the first primeval calf.
Ah, many things this tale might teach—
But I am not ordained to preach.

—*Anonymous.*

PLANT SONG

"O where do you come from, berries red,
Nuts, apples and plums, that hang ripe overhead;
Sweet, juicy grapes, with your rich purple hue,
Saying, 'Pick us, and eat us; we're growing for you'?

"O where do you come from, bright flowers and fair,
That please with your colors and fragrance so rare,
Glowing in sunshine, or sparkling with dew?"
"We are blooming for dear little children like you;

"Our roots are our mouths, taking food from the ground;
Our leaves are our lungs, breathing air all around;
Our sap, like your blood, our veins courses through—
Don't you think, little children, we're somewhat like you?

"Your hearts are the soil, your thoughts are the seeds;
Your lives may become useful plants or foul weeds;
If you think but good thoughts, your lives will be true,
For good women and men were once children like you."

—*Nellie M. Brown.*

A MASQUE OF THE SEASONS

Queen
Summer or Winter or Spring or Fall,—
Which do you like the best of all?

Little Jasper
When I'm dressed warm as warm can be
And with boots, to go
Through the deepest snow,
Winter-time is the time for me!

Queen
Summer or Winter or Spring or Fall,—
Which do you like the best of all?

Little Mildred
I like blossoms, and birds that sing;
The grass and the dew,
And the sunshine, too,—
So, best of all I like the Spring.

Queen
Summer or Winter or Spring or Fall,—
Which do you like the best of all?

Little Mandeville
O little friends, I most rejoice
When I hear the drums
As the Circus comes,—
So Summer-time's my special choice.

Queen
Summer or Winter or Spring or Fall,—
Which do you like the best of all?

Little Edith
Apples of ruby, and pears of gold,
And grapes of blue
That the bee stings through,—
Fall—it is all that my heart can hold!

Queen
So! my lovelings and pretty dears,
You've *each* a favorite, it appears,—
Summer and Winter and Spring and Fall,—
That's the reason I send them *all!*

—*James Whitcomb Riley.*

The above can be easily dramatized by assignment of parts to children and providing simple costumes, though no special dress is necessary.

JUVENILE SELECTIONS

IN "NATURE AND VERSE":

Marjorie's Almanac—Selected
Who Stole the Bird's Nest—L. Maria Child
A Boy's Song—The Ettrick Shepherd
The Cotton Plant—Selected
The Four Winds—F. D. Sherman
What the Winds Bring—E. C. Stedman
The Body—Selected
Two and One—Selected
Hurrah for the Flag—Selected

POLLY FLINDERS. Found in Mother Goose Village (Rand-McNally), or in Howe Third Reader (Scribners).

Suggestions for Dramatization: Select children about nine years old to take the parts of Polly Flinders, the mother, Mr. Cotton Stalk, six or eight children (or the whole class) to represent factory workers. Mr. Cotton Stalk is the only person in anything but ordinary costume. A hat made of leaves from cotton plant; a cotton stalk in his hand; bits of cotton stuck on his clothes will suggest his character. The name of the nearest factory town may be substituted for London-town.

THE GOLDEN WINDOWS. By Laura E. Richards (Little, Brown & Co.).
WHEN THE WORLD WAS YOUNG. By Elizabeth V. Brown.

These two books have some good material and hints for vivid story-telling and play.

A good juvenile nature drama of more length and elaborateness is Mondamin: The First Harvest of Indian Corn. By Harry M. Baum (Atlantic Educational Journal, Baltimore, September and October, 1911). This has ample stage directions and clear assignment of parts. Part I is The Planting of the Corn; Part II is The Blessing of the Corn Fields; and Part III is The Reaping of the Corn Fields. Either part is complete enough in itself to be used alone.

REFERENCES TO ADDITIONAL LITERATURE

S. R. Crockett, Idyll of the Hayfield.
Norman Gale, The Country Faith.
P. B. Shelley, Ode to the West Wind; The Cloud.
P. P. Cooke, Life in the Autumn Woods.
J. W. Riley, When the Frost is on the Punkin.
Alfred Tennyson, Song of the Brook; Selections from Maud; Crossing the Bar; Songs from the Princess.
W. C. Bryant, A Forest Hymn; To a Water Fowl; Robert of Lincoln.
Robert Burns, To a Mountain Daisy; To a Mouse.
William Wordsworth, Tintern Abbey; Daffodils.
John Milton, Il Penseroso; L'Allegro.
Bliss Carman, The Joys of the Road.
W. D. Howells, The Song the Oriole Sings.
Mary Howitt, Cornfields.
Helen G. Cone, The Dandelions.
Sidney Lanier, Song of the Chattahoochee; Corn; Tampa Robins; The Marshes of Glynn.
Robert Browning, Sunrise (opening song of Pippa Passes); Home Thoughts from Abroad.
Henry Timrod, The Cotton Boll.
J. G. Whittier, Corn Song.
John Ruskin, Leaves Motionless; Cloud Balancings (from Modern Painters).
Stopford A. Brooke, The Earth and Man.
Hamlin Garland, The Herald Crane.
E. R. Sill, Among the Redwoods.
John Keats, To Autumn.

BOOKS OF NATURE SELECTIONS

Poems and Lyrics of Nature, Edited by Edith W. Rinder. London: Walter Scott, Limited.
Nature in Verse, Edited by Mary I. Lovejoy. New York: Silver, Burdett & Co.
Golden Treasury of English Lyrics, Edited by F. T. Palgrave. New York: The Macmillan Co.
Songs of Nature, Edited by John Burroughs. New York: McClure, Phillips & Co.
The World's Best Poetry — Nature V. Philadelphia: J. D. Morris & Co.
Out-of-Doors, Edited by Rosalie Arthur. New York: The Dodge Publishing Co.
Wild Life in the Rockies. Enos A. Mills.
The Mountains of California. John Muir.
Warner Library of the World's Best Literature.

AGRICULTURAL LITERATURE

Proceedings of Conference for Education in the South, particularly the volumes for 1906, 1907, and 1911.

Pamphlets which can be had from the U. S. Department of Agriculture: Y. B. Separate 501, The Farmers' Cooperative Demonstration Work, by S. A. Knapp; B. P. I.—503, Fall Breaking and Preparation of Seed Bed, by S. A. Knapp; B. P. I.—619, Production of Cotton under Boll Weevil Conditions, by S. A Knapp; B. P. I.—644, Boys' Demonstration Work, by Bradford Knapp; Secretary's Circular No. 57 (November, 1910), The Mission of Cooperative Demonstration Work in the South, by S. A. Knapp; B. P. I.—730, The Corn Crop in the Southern States, by Bradford Knapp; B. P. I.—741, Results of Boys' Demonstration Work in 1911, by Bradford Knapp; B. P. I.—747, Selection of Cotton and Corn Seed on Southern Farms, by Bradford Knapp; B. P. I., No. A—79, Girls' Demonstration Work, by O. H. Benson (January, 1912).

Bailey's Encyclopedia of Agriculture.

World's Work, Review of Reviews, farm papers, school journals, and other magazines.

Year Books of U. S. Department of Agriculture.

L. H. Bailey, The School House; The Farmer's Challenge.

"And he gave it for his opinion that whoever could make two ears of corn or two blades of grass to grow upon a spot of ground where one grew before, would deserve better of mankind and do more essential service to his country than the whole race of politicians put together."
—DEAN SWIFT.

District Agricultural Schools

Presented at

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Alabama Agricultural Schools

OBJECTS AND AIMS
COURSE OF STUDY
DIPLOMAS
THEIR WORK
HINDRANCES. ETC.

By Dr. J. A. B. LOVETT
Superintendent of Exhibits

THE BROWN PRINTING CO., MONTGOMERY, ALA.

BOARDS OF CONTROL.

The Boards of Control of all our nine District Agricultural Schools consist of the Governor of the State, the Commissioner of Agriculture and Industries, and the State Superintendent of Education, together with two local members for each school.

The three State officers named constitute the Executive Board, and when combined with the local members, they form the Board of Control for each school. The present Executive Board is as follows:

Governor William D. Jelks, Ex-Officio; Hon. R. R. Poole, Commissioner of Agriculture and Industries, Ex-Officio; Hon. I. W. Hill, State Superintendent of Education, Ex-Officio; Hon. H. C. Gunnells, Secretary-Treasurer.

ALABAMA AGRICULTURAL SCHOOLS.

By DR. J. A. B. LOVETT, Superintendent of Exhibits.

Alabama has taken the lead in districting the State for agricultural high schools; and these schools, connected with the State Polytechnic Institute at Auburn, as branch institutions, form a chain of schools and sub-stations that promise much for the future agricultural education of the State.

An agricultural high school has been established in each of the nine congressional districts, and all these schools are doing efficient service as an important part of the educational work of the State.

THEIR OBJECTS AND AIMS.

The object of these schools may be briefly stated as follows:

1. To turn out young men well grounded in the underlying principles of scientific and practical agriculture, that they may make successful planters, and advance the farming interests of the State.

2. To give such instruction and training as will fix upon the minds of the young men high ideals of practical country life education as is given in the best agricultural high schools under the name of "Agriculture and Home Economics."

3. To educate and fully equip young men and women for efficient teaching in the public schools of the State.

4. To prepare those who desire to enter our Polytechnic Institute at Auburn, or any other higher institution in the State.

5. To give to all a THOROUGH PRACTICAL EDUCATION, and to instill within them a broad and correct idea of true American citizenship.

6. To fit every student for true living, by developing a well-rounded Christian character.

COURSE OF STUDY.

The list of subjects for all nine of our agricultural high schools is uniform, and was adopted by the Executive Board. This course was arranged by men of rich experience in educational work, and it is well adapted in both its subjects and gradation to the normal development of the student-mind.

It is as follows:

FRESHMAN CLASS.

Agriculture for Beginners, by Burkett, Stevens and Hill (18 weeks). Nine excursions with class to farm, or exercises in farm work. Principles of agriculture, by Winslow (9 to 18 weeks).

Arithmetic—Cook & Cropsey; also Wentworth's Mental Arithmetic.

English Grammar—Buehler.

Algebra—Milne's Elementary.

Georgraphy—Maury's Manual.

United States History—Hansell's Higher.

Spelling—Reed's Word Lessons.

Penmanship—New Era System.

SOPHOMORE CLASS.

Soils and Crops—Morrow and Hunt. (Four Bulletins and 18 farm exercises or Botanical excursions). (This book thoroughly reviewed).

Botany—Bergin.

Algebra—Milne's High School.

Rhetoric—Lockwood and Emerson. (Supplementary work). (English and American Classics).

Alabama History—Brown.

Civil Government—Peterman.

Spelling—Reed's Word Lessons.

Latin—Collar and Daniel's Beginners.

Physiology—Overton's.

JUNIOR CLASS.

Principles of Horticulture—Goff (18 weeks).

Stock Lectures—(Abstracting from Curtis and Shaw, and three bulletins on same subjects).

Chemistry—Remsen's Briefer Course (27 weeks).
Algebra—Milne's High School.
Geometry—Wentworth's Plane.
Physical Geography—Davis.
Physics—Gage.
English History—Coman and Kendall.
Rhetoric—Lockwood and Emerson. (Supplementary, English and American Classics).
Latin—Gradatim and two books in Cæsar.

SENIOR CLASS.

Avanced Botany—(To be selected).
Geometry—Wentworth's Solid.
Trigonometry—Wentworth's Plane.
General History—Meyer.
English Literature—Pointer. (Supplementary work, English Classics).
Arithmetic—(Review). Use a higher arithmetic for text-book).
Latin—Complete Cæsar; Virgil.
Theory and Practice of Teaching—Page.
Schools Laws of Alabama.
NOTE—This list of subjects is so divided during the annual session as to make each term to to carry an equal number of the subjects for the grades.

DIPLOMAS.

These schools are in no sense Colleges; and while they do not confer degrees, they are empowered under the law to award diplomas to all students who satisfactorily complete the course of study, and who are known to be of good moral character. These diplomas are produced on genuine English parchment, with the best lithographic effects. They are signed by the President and Faculty of the School granting them, together with the Governor, State Superintendent of Education, the Commissioner of Agriculture, the local members of the Board, and the Secretary of the General Board.

THEIR WORK.

It is a well authenticated maxim: "By their fruits ye shall know them." From the beginning of their career as educational forces in Alabama,

our agricultural high schools have been conspicuous for the patronage they have enjoyed, as well as for the high class of work they have done.

Most of these schools were established but little more than half a score years ago. During this short period they have graduated nearly five hundred students, and have instructed many thousands in the lower grades. The graduates of these schools have taken honorable stations in life, thus enriching the citizenship of our great commonwealth. Very many of them have augmented the teaching force of the State, while others have entered other professions and callings. Had it not been that these schools are so easy of access, and the cost of attending them is so moderate, this army of young men and women could not be counted among the agricultural, business, social and professional forces of the State.

It has been said by those who are not in sympathy with these schools, that their advantages are afforded only to the rich, that the poor boys and girls, on account of the expense, cannot attend them. From my personal observation, having been in charge of one of these schools for a long term of years, quite the contrary is the case. The average annual enrollment of non-resident students at this school was about one hundred; and ninety-nine per cent. of these students came from the rural districts, having just enough money, with rigid economy, to get through the sessions. Many of them sought and obtained employment while in school to supplement their limited means. During my entire engagement with this school I had but the fewest number of students who could be considered rich, or who came from wealthy homes. No philanthropist, or friend of education can look into one of these schools without having his very soul touched at seeing the manly struggle these farmer boys are making to obtain an education. As a whole, they come from the quiet scenes of simple country life; they bear all the marks of labor on the farm; in their convictions of religious and moral duty, they are as strong and firm as physical labor has made their muscles; their nervous constitutions have not been shattered by habits of intemperance; in a word, they are a struggling mass of honest young people striving for that

growth and development of mind and soul which will enlarge their sphere of usefulness in life.

It has been intimated that few of the young men graduating from our agricultural schools become farmers. In a measure, this is true. Possibly, very few of those who graduate contemplate agriculture as their life vocation. But it must be remembered that a very small per centage of the students entering any of our schools ever graduate. The men who are to be found in the front ranks of the busy scenes of life, hold but few diplomas. The world draws its greatest number of workers from the under-graduate classes. An agricultural school which has an average annual enrollment of two hundred students, will most likely have the four classes represented thus: Freshman, 120; Sophomore, 40; Junior, 30; Senior, 10.

The mind of the critic has been fixed upon the graduates, losing sight of the 190 who fail to reach graduation. To be sure some of the Sophomores and Juniors enter other vocations than that of farming. But what of the great army of the Freshmen? and many of the Sophomores and Juniors? They are to be found on the farm with the splendid equipment the subjects of these classes afford, meeting the requirements of the law creating these schools, viz: "To turn out young men well grounded in the underlying principles of scientific and practical agriculture, that they may make successful planters, and advance the farming interests of the State."

There is another feature pertaining to the operation of these schools which is likely to be overlooked. I refer to the extent of their work and influence in the State. Our nine district agricultural schools maintain an average annual enrollment of about 1800 students. Let us call this their *direct* enrollment. These schools all have Normal, or Training Classes, preparing students to teach in the public schools of the State. On an average, they furnish about ninety student-teachers, and these student-teachers, all of them, enroll about 40 pupils each, or 3,600 pupils in the public schools for at least four months in the year. Let us call this the *indirect* enrollment of the district schools. Now, add the direct enrollment to the indirect enrollment and you have 5,400 young people enjoying *directly* and *indi-*

rectly the educational influence and force of our district agricultural schools.

It may be urged that the ninety student-teachers above referred to could have come from other institutions. From my viewpoint they could not; the demand for teachers in our public schools, since the operation of the new license law, has been greater than all the schools of the State could supply. These agricultural schools, in view of the law which requires them to make teachers as well as farmers, have come nobly to the rescue, and have furnished their quota of well equipped teachers for our public schools. Eliminate this army of young teachers from the public school system and their absence would be keenly felt in many sections of the State.

If the premises in the foregoing propositions are correct, it must be conceded that the literary work of our district agricultural schools is of no mean order, and that the influence of these schools in portions of the State other than those in which they are located, is far-reaching.

Concerning the agricultural work of these schools, reference is made in another part of this article.

HINDRANCES.

All these schools have been more or less handicapped since their establishment. Like most new public enterprises, they have been targets not only of unfriendly criticism, but have suffered in many other ways. These hindrances, with suggestions for overcoming them, may be summed up as follows:

1. Confidence. The element of confidence holds together the social, industrial and commercial fabrics of the land. Eliminate this all-adhering agency, and our civil, religious and commercial institutions would be wrecked. Remove from the universe the law of universal gravitation, and the whole system of worlds would be hurled into chaos. So with confidence—it holds things together.

Lack of confidence in their experimental work, however well directed, has been, and is, a serious hindrance to our agricultural schools. When our farmers shall more clearly appreciate the fact that these schools were created for their especial benefit, and that the State is employing in them

competent men in scientific and practical agriculture, and that the experiment stations are used as fields for demonstrating all problems connected with agriculture and its kindred subjects,—when our farmers shall understand these propositions, a great burden will roll from the bended backs of these burdened and struggling schools, and they will stand forth with blessings more abundant in their hands.

Many and varied are the problems in Alabama agriculture that these schools *can* and *will* solve, if given a fair opportunity to do so. Among these may be named: The reclaiming of abandoned lands; the constant improvement of impoverished soil; the right use, and proper balancing of fertilizer formulas; the testing of the different varieties of corn and cotton; the best methods of cultivation, etc.

Can these things be done at our experimental stations? All our nine schools are making efforts along most of these lines; but their efforts, however successful within themselves, will amount to but little to our farmers without their friendly interest in them. If the agricultural work of these schools is worthy of recognition, it should have the confidence of our farmers. When this confidence is secured, our experiment stations will take on new and vigorous life and they will prove a boon to every section of the State.

These schools were created as "branch schools" of the Auburn College, and until they shall be so connected *by law*, with the parent institution as to receive the regular and constant oversight of the Alabama Polytechnic Institute, they will suffer as isolated branches do, when disconnected from the parent stem. The principle of the "vine and the branches" should be recognized and rigidly acted upon in the operation of these schools, especially in the matter of all experimental work on the sub-stations. This would secure and hold the confidence of our farmers as nothing else could do.

2. Another hindrance to our district agricultural schools is the fact that there has always existed a wide-spread prejudice against them. While it is well known that this prejudice has its origin in a lack of information concerning the extent of the work of these schools, and the limited amount of money appropriated for their suste-

nance, yet this prejudice is far-reaching and deep-rooted, and it remains for those who *think* upon the economical measures of our educational system, to eradicate this prejudice. Some office-seekers who are more concerned in gaining positions and power at the hands of the people, would sacrifice our noblest institutions, if thereby they could advance their own interests.

These prejudice-generators have even said that Alabama's nine agricultural schools should be discontinued, and the funds appropriated to them, should be added to the public school funds of the State. The impression is made on the minds of many, that this diversion of the funds appropriated to the agricultural schools, would make an important addition to the school terms of our public schools. Let us see about this proposition. Most any student in the seventh grade can solve the problem. We will assume that the State spends, annually, in round numbers, one million dollars; that the length of the public school term is four months, or 480 hours; and that the appropriation to the nine agricultural schools is $22,500.00.

Here is the statement:

$1,000,000 : 480 hours :: $22,500 : X.

Solution: Multiply the second term by the third, and divide the product by the first. This will give the value of X, which is *ten hours and four-fifths of an hour*—hardly two days of school work.

Now, please, re-read the "objects and aims" of these institutions; consider the nine able and faithful Presidents with their eighteen or more capable assistants, carrying out these objects and aims; have to loom up before your view the nine spacious and well-equipped school buildings, presented to the State by the people, and representing and expenditure of something like $80,000.00; look at the laboratories and well-started libraries furnishing auxiliaries to the general work; read again what the schools have done, what they are now doing, and consider their future possibilities; and then see if there is any logic, common sense, principle of educational economics, or *patriotism*, that would even suggest the suppression of these institutions for the mere trifle of putting the almost invisible fringe of ten hours to the public school garment.

3. Insufficient funds, is another serious hindrance to a higher efficiency of our agricultural high schools.

Everything that grows must have an ever-increasing supply of food so as to meet the demands of the constantly expanding body. Growing animals and growing vegetation, both enlarging by intercellular development, must have a regular increase of the materials of growth. The same with institutions. A church that never calls for money, could give no better evidence of decay.

I would not be understood as claiming that our agricultural schools should *always* be clammoring for increased appropriations. As animals and trees have their "growing periods," so have our schools. Our older institutions of learning have had their "growing periods." The cost of running them has become fixed, and unless they evolve some new feature in their work, calling for an additional outlay, they get along all right on uniform appropriations. Our agricultural high schools have had something over ten years of their "growing periods," without a single additional dollar to the original appropriation. This original appropriation was hardly sufficient to keep them alive, much less to be a means of growth and development.

But, if these schools really *need* more money, why have they not asked for it? The reason is plain. The unsympathizing legislator, with his threats of extermination, has caused these children of the State, the agricultural schools, to tremble at every assembling of the law-makers. They have felt that they dare not ask for *more* bread, when their only morsel was in jeopardy.

However, it is pleasant to know that all these fears were not well founded, that what was thought to be a menace, did not really exist in such magnitude as to result in any serious harm. Patriotic sentiments have prevailed to such an extent that these schools have been allowed to live, and it is confidently believed that the great majority of Alabama's future legislators will be convinced that these schools not only ought to live. but that they should grow and prosper in the land.

Let it be hoped that the next legislature will seek to understand the needs of these schools, and that no time will be lost in relieving their embarrassment.

In discussing the hindrances of these schools, I would not have the reader to think, for a moment, that our district agricultural high schools are *friendless*. The scores of communities, the hundreds of families, and the thousands of young people they have touched and blessed with their up-lifting influences, stand up as witnesses to their noble work, and all these are our *friends*. It is a matter of solid encouragement, too, that the friends of these institutions are rapidly increasing in numbers, and that a profounder sentiment in their favor is growing year by year.

BRIEF HISTORICAL SKETCH.

THE SCHOOL AT ABBEVILLE.—This school was established in 1888, and is the oldest District Agricultural School in the State. The following Presidents have been in charge, in the order named: Professors A. G. Browne, Daniel Gillis, J. W. Davis and J. V. Brown.

Dr. Clarence J. Owens is now the President.

The average annual enrollment is about 250. A commodious new building has recently been erected and thoroughly furnished.

THE SCHOOL AT EVERGREEN.—Established in 1892, with Prof. J. A. Liner, Preseident, who served in this capacity eight years, being succeeded by Prof. J. A. Duncan, who served two years. Prof. Liner was recalled to the Presidency some three years ago, and he is now in charge.

THE SCHOOL AT ATHENS.—Established in 1889. The Presidents in charge as follows: Prof. T. D. Samford, 1889; Prof. C. L. Newman, 1890; Prof. R. E. Binford, 1891-92; Col. M. K. Clements, 1893-1904; Prof. H. J. Fusch, now in charge, 1904-06.

THE SCHOOL AT WETUMPKA.—This school was established in 1896. During the first three years, Prof. R. O. Meek was Presidnet. Since that time Prof. H. J. Willingham has been in charge. The average annual enrollment is about 250. Students taught in the public schools last year, 34. Number of children under the instruction of these student-teachers, 2,000. The main building of this school was destroyed by fire last year, and a magnificent structure takes its place at a cost of about $25,000.

Quite an injustice seems to have been done this school. Wetumpka put up $10,000 in cash, besides considerable other valuable donations to secure the location of the school, believing, as the people of Wetumpka did, that the original appropriation of $7,500 named in the act locating the Fifth District Agricultural School at Hayneville, would come to the school when it was re-located at Wetumpka, in 1896. Not a dollar of this money has ever been paid out of the treasury, being refused on technical grounds. It is hoped

that this school may yet secure what was confidently expected by the citizens of Wetumpka, who acted in good faith in the premises.

THE SCHOOL AT BLOUNTSVILLE.—Established in 1895, with Dr. J. A. B. Lovett, President. Dr. Lovett resigned before the school opened, and his first assistant, Prof. Blalock, was made President, serving two years. Prof. Blalock was succeeded by Prof. W. J. Beeson who was in charge two years. In 1899, Dr. Lovett was recalled to the Presidency, and continued in this position seven years, being succeeded by Prof. E. A. Miller in 1906.

THE SCHOOL AT JACKSON.—Established in 1895. The Presidents in the order of their service, have been as follows: Professors T. S. Slice, J. B. Murphy, and Douglass Allen.

Prof. W. F. Monk is now in charge.

THE SCHOOL AT ALBERTVILLE.—Established in 1893. Presidents as follows: Professors H. J. Abernathy, from February 1893, to June same year; M. V. Henry, from June 1893 to 1897; W. F. Feagin, from 1897 to 1901; J. B. Hobdy, from 1901 to the present time, and he is now in charge.

This school has an average annual enrollment of over 200 pupils. Over 2,000 young people are taught annually, by the Normal students of the Albertville school.

The citizens of Albertville expended more than $2,500 during the past year in enlarging their main building, which the growing attendance demanded.

THE SCHOOL AT SYLACAUGA.—This school was established in 1895. The Presidents in charge, as follows: Professors J. R. Dewberry, A. G. Seay, T. A. Anderson and T. C. Moore. The latter is now in his second year's service in this school. Attendance of students has always been good.

THE SCHOOL AT HAMILTON.—Established in 1895, with Prof. J. E. Alexander the first President. Following him, Professors S. T. Slaton, G. M. Howerton, S. A. Halley and E. F. Cawthen

have served in the order named. Prof. H. O. Sargent is now serving his second year as President.

This school has a large attendance of students from the rural districts of the Northwestern portion of the State. The school had the misfortune recently of losing by fire its splendid dormitory.

PRIZES TO FARMER BOYS.

A gold scarf pin, representing an ear of corn, will be awarded to the boy attending any of the Agricultural high schools, not over sixteen years of age, for the best six ears of corn, any variety, self-grown, to be exhibited at the Alabama Fair in Montgomery next Fall.

A silver scarf pin, of similar design, will be awarded for the next best, on the same conditions.

The corn must be sent by express, prepaid, at least one week before the opening of the Fair.

ASSOCIATION OF PRESIDENTS—THE FAIR.

At a meeting of the Presidents of the District Agricultural Schools, in Montgomery last June, the "Association of Presidents" was organized, with President J. A. Liner, Chairman, and President H. J. Willingham, Secretary.

It was decided to have mid-winter meetings, the first to be held at Wetumpka, upon a date to be fixed later on.

At this meeting, a representation of the various schools at the Montgomery Fair was planned, and Dr. J. A. B. Lovett was unanimously selected to prepare and conduct the exhibits.

ACKNOWLEDGMENTS.

The Superintendent of the exhibits of the District Agricultural schools, gratefully acknowledges encouragement from Governor William D. Jelks; Commissioner of Agriculture, Hon. R. R. Poole; State Superintendent of Education, Hon. I. W. Hill; Secretary of the Alabama Fair Association, Jesse C. Adams; and the Presidents and Agriculturists of the District Agricultural Schools.

Agriculture is the noblest art—
Let it grow without a fetter;
And blest is he who sets his heart
To make our farming better.

SOME SUGGESTIVE EXPERIMENTS FOR USE ON PRIVATE FARMS.

By Dr. J. A. B. Lovett.

Late President and Agriculturist of the State School at Blountsville.

EXPERIMENT IN ALFALFA.

While it is best to sow alfalfa in the Fall, from September 15th to October 15th, my best success was Spring sowing. Sow any time in the early Spring.

DIRECTIONS FOR ONE-FOURTH ACRE.

1. Select a plat of land where you can extend the acreage when desired. Sandy loam, with clay, or porous gravelly clay subsoil, is considered best. If you have none of this kind take the next best you have, remembering that alfalfa will not stand low, wet land, or land that overflows.

2. Break the land deeply and pulverize thoroughly.

3. Before sowing, broadcast five bushels of lime. Unless your land is strong in lime, this is of great importance.

4. With the utmost care as to evenness, sow seven pounds of fresh alfalfa seed.

5. At time of sowing, broadcast a sack of soil from a well established alfalfa field. This soil contains bacteria, which is essential to the life and growth of the plant. I have had splendid success with soil secured from the Ewell Farm, Spring Hill, Tennessee. The Nitro-culture preparation failed to give me any favorable results. A sack of the soil above mentioned costs only one dollar.

6. On land that will produce about 15 bushels of corn, or 500 lbs. seed cotton per acre, use the following mixture: 100 lbs. acid phosphate; 50 lbs. kainit;

25 lbs. sodium nitrate. If these ingredients cannot be secured, use 150 lbs. high grade commercial fertilizer. If the soil is quite *rich*, omit the fertilizer altogether.

7. Mow the alfalfa on the first appearance of blooms. You can mow it several times during the season.

8. You are likely to be troubled with an overgrowth of grass and weeds. If so, clip the plants often, and it would be well to run a weeder over the plat or a disc harrow with the wises set perfectly straight.

Should you fail of success in your Spring sowing, cultivate the plat all through the summer, and sow again in the Fall. This summer cultivation will destroy the weeds and grass.

It will seem to you that it costs too much to bother with alfalfa. But when it is remembered that the big cost and trouble are practically ended after you have given to it a good start, and that one acre well established in this wonderful plant will produce from $60 to $100 worth of hay each year, and for more than fifty years, without re-seeding, it is well worth the painstaking in starting it right. An animal that will live from 75 to 100 years, and bring wealth to its owner all the time, is worth careful attention while getting its start. So with alfalfa.

NOTE—That you may appreciate the value of the inoculated soil, sow about a pound of seed in a different place without using the alfalfa soil above referred to.

Try this experiment next Spring.

EXPERIMENT IN DRILLING AND CHECKING COTTON.

It is claimed by some good cotton growers that more cotton can be produced, per acre, when cotton is planted in the check. Suppose you settle that question with a little home experiment. The following is suggested:

Select one-half acre of evenly distributed soil conditions. Make of this, two equal plats.

On plat number one, plant the seed in your accustomed way.

On plat number two, lay off the rows 3 1-2 feet apart, and check 3 feet apart.

If the soil is fairly good, use no fertilizer, as this is not a fertilizer test.

Cultivate alike, and weigh the crops. Note the difference.

EXPERIMENT IN QUANTITY OF FERTILIZER.

With many of our farmers it is a matter of doubt as to how much fertilizer to use per acre. If it pays to use less, of course less should be used; but if it pays to use more, it is plain that more should be used.

Try this experiment:

Lay off one-fourth of an acre, selecting land of uniform soil conditions. Divide this into two plats, and seed to cotton. On plat number one, use 25 lbs. fertilizer. On plat number two, use 50 lbs. of the same brand of fertilizer. This will be 200 lbs. per acre on plat number one, and 400 lbs. on plat number two.

Weigh the yield from each plat, and compare the excess of cost with the excess of yield.

If desired, a half acre of land may be divided into four plats, and the quantity distributed as follows: 20 lbs., 30 lbs., 40 lbs., 50 lbs.

In either case, compare the excess of cost with the excess of yield.

EXPERIMENT IN QUALITY OF FERTILIZER.

Many people understand that the best *quality* of anything is cheaper in the long run. Put a shoe, costing $2.00 a pair on one foot, and a shoe, costing $2.00 a pair on the other foot, and compare their relative value after six month's use. This would be an experiment on the quality of shoes.

Farmers should know, for themselves, the relative values of the different fertilizer formulas.

Try the following experiment: Select one-fourth of an acre of land having uniform soil conditions. Divide into three plats, and seed to cotton. On plat number one use 25 lbs. of 8-2-2 fertilizer. On plat

number two, use 25 lbs. 10-2-2 fertilizer. On plat number three, use 10-2-3 fertilizer. The first formula is low grade, and the last two formulas are high grade fertilizers.

On harvesting, weigh the yield from each plat, and compare the excess of yield with the excess of cost.

EXPERIMENT IN DISTANCE—COTTON.

It is apparent to very many scientific farmers, that many of our cotton growers crowd the land too much. The limbs of the cotton stalk should be given ample room to spread, and this can be done only by giving plenty of space on the ground.

Try the following experiment: Select a place of uniform soil conditions, and lay off three 15-foot plats, any length of rows, so that they are all the same length. On plat number one, have five rows, 3 feet apart. On plat number two, have four rows, 3 3-4 feet apart. On plat number three, have three rows, five feet apart. Use same amount of fertilizer, and cultivate alike. On harvesting weigh the yield of each plat.

EXPERIMENT IN IMPROVING THE SOIL.

The farm is the farmer's bank. If a bank account is constantly *checked* upon without keeping up the deposits, it will run "down and out." So with our farms. Every crop taken from the land is a check upon the soil. How to keep in tact the fertility of the soil, and the best physical condition of the soil's texture, is the purpose of this suggestive experiment.

Select one acre of land, of medium fertility, and divide it into two plats. On plat number one, plant as follows:

First year, corn and cowpeas.

Second year, oats and cowpeas.

Third year, oats and vetch.

Fourth year, cotton.

On plat number two, plant cotton successively.

Weigh out the cotton of the fourth year from both plats and note any difference in the yield. Also note

the general improvement in the soil, both chemically and physically.

Should you proceed along this line with your entire farming operations, and *continue* this process, your land would continue to improve.

EXPERIMENT IN DEEP BREAKING—CORN.

Clay soils and sub-soils should be broken deeply. There are at least two reasons for this. 1. Deep breaking permits a longer range for the feeding of the plants. 2. Deep breaking makes a deeper reservoir for moisture.

Try this experiment:

Select one-fourth acre, with uniform soil conditions. Break plat number one five inches, and plat number two, ten inches. Fertilize and cultivate alike, and weigh the yield at harvesting.

EXPERIMENT IN RECLAIMING OLD LANDS.

There are many old fields in Alabama that should be reclaimed; or *sick* lands that ought to be *nursed back to health*. With a reasonable amount of labor and patience, and the employment of leguminous plants, this can easily be done; and these old fields that are now almost worthless to their owners, can, within a few years, be made valuable for all kinds of farm use.

Try the following treatment on one or more acres and be convinced:

1. Break deeply in Winter or early Spring.

2. About June 1 break again, use disc harrow and sow to cowpeas.

3. In the early Fall turn cowpeas under, and about November 1, sow to rye.

4. After pasturing the rye through the Winter, and when it is in "boot" next Spring, turn it under.

5. About June 1, sow to velvet beans, and turn them under in the Fall, following with red clover. At time of seeding to clover, use the following mixture per acre:

400 pounds acid phosphate.

200 pounds kainit.

After the above treatment, rotate your crops, and the results will no doubt be satisfactory.

EXPERIMENT IN VISITING A STATION.

Did you ever visit one of our experiment stations? You have heard much about them, but have you ever walked over them and noted the kind of work they are doing, and attempting to do? It may be that you have false *impressions* concerning their work. It may be that you hvae *undervalued* their efforts.

You could not bring greater pleasure to the managers of these stations than to visit them, and learn all about their operations. You may learn something from a visit to them, or you may impart to them important information you have gathered from your experience in farming. You may live many miles away from the nearest station. If so, write to the agriculturist of any of them. Ask questions touching any point about which you desire information, and they will take special pleasure in serving you.

It will be a matter of solid encouragement to these stations for our farmers to visit them more, and seek and obtain the advantages they afford.

Try this experiment.

EXPERIMENT IN FERTILIZER FORMULA—COTTON.

By. Prof. L. T. Rhodes, Agriculturist.

State School at Evergreen.

Select one and a half acres of land having uniform soil conditions. Lay this off into six equal plats, and mark their numbers.

On plat No. 1, use no fertilizer.

On plat No. 2, use 12 1-2 lbs. cotton seed meal.

On plat No. 3, use 20 3-4 lbs. acid phosphate.

On plat No. 4, use 20 3-4 lbs. kainit.

On plat No. 5, use 12 1-3 lbs. cotton seed meal, 20 3-4 lbs. acid phosphate and 20 3-4 lbs. kainit, well mixed.

On plat No. 6, use 7 1-2 lbs. cotton seed meal, 25 lbs. acid phosphate, and 3 3-4 lbs. kainit, mixed.

Plant all at same time, and cultivate alike.

On harvesting weigh the product of each plat separately, and note the differences.

This simple experiment may help you to determine the kind of plant food your land needs.

If it is desired to carry experiment further, and determine per cent. of lint, weigh seed cotton, and when ginned, weigh the seed. Of course the difference will be lint. Divide weight of lint by weight of seed cotton to get per cent. of lint.

The experiment is based on the assumption that the land is even running in regard to fertility and character of soil.

COTTON VARIETY TEST.

Prepared by PROF. W. NICHOLS, Agriculturist.
First District Agricultural School, Jackson, Ala.

Eight plats of land, each one a sixteenth of an acre in size, are to be used to determine the best varieties of cotton to plant on the average soils of Alabama.

Break the land in early Spring to a depth equal to that of the surface soil, and if turfy or flaky, go over with disc harrow.

From the 5th to the 15th of April lay off in rows 3 feet apart, and fertilize in the drill at the rate of 350 lbs. of any good fertilizer.

Bed on the fertilizer, and plant the following varieties.

Plat 1—Cook's Improved.
Plat 2—Lewis' Prize.
Plat 3—Russell Big Roll.
Plat 4—Peterkin.
Plat 5—Hawkins.
Plat 6—King's Improved.
Plat 7—Floradora.
Plat 8—Some local variety.

Give each the same kind and amount of fertilizer and cultivation.

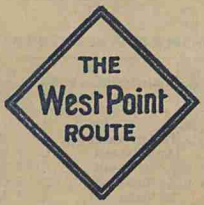
When harvested, weigh cotton from each plat carefully, to determine best yield of seed cotton.

No. 8—11-5-22. Corrected to November, 5, 1922

DESTROY ALL PREVIOUS ISSUES

Atlanta & West Point Rail Road Co.

The Western Railway of Alabama



Time Tables

2701

THROUGH TRAINS

ATLANTA AND COLUMBUS

VIA NEWNAN AND C. OF. GA. RY.

No. 19 Daily	No. 17 Daily	Pullman Sleeping Cars on Trains Nos. 19 and 20 Between New York and Columbus Parlor Car on Trains Nos. 17 and 18 Between Atlanta and Columbus	No. 18 Daily	No. 20 Daily
AM	PM		AM	PM
7 40	4 05	Lv Atlanta, A. & W. P. Ar	10 45	7 45
8 50	5 20	Ar Newnan, A. & W. P. Lv	9 30	6 30
8 50	5 25	Lv Newnan, C. of G. Ar	9 30	6 25
9 15	5 40	Ar Raymond Lv	9 15	6 05
f9 24	f5 55	" Bexton "	f9 04	f5 55
9 32	6 04	" Lutherville "	8 56	5 44
f9 40	6 12	" Primrose "	8 46	f5 34
f9 47	f6 20	" Allie "	f8 38	f5 27
9 58	6 32	" Greenville "	8 28	5 16
10 08	6 42	" Harris "	8 17	5 06
10 17	6 52	" Durand "	8 07	4 56
f10 23	f6 57	" Meriwether White Sulphur "	f7 57	f4 48
10 31	7 08	" Chipley "	7 50	4 40
f10 42	------	" Tip Top "	7 39	f4 29
10 50	7 26	" Hamilton "	7 31	4 21
f10 57	------	" Kingsboro "	------	f4 13
11 05	7 39	" Cataula "	7 17	4 05
11 15	7 48	" Fortson "	7 06	3 55
f11 23	f7 54	" Nankipooh "	f6 58	f3 48
11 37	8 10	" Columbus Second Ave., Sta	6 45	3 35
11 45	8 15	Ar Columbus Lv	6 40	3 30
AM	PM		AM	PM

Camp Benning (Columbus). The C. of Ga. Ry. operates suburban train service between Columbus and Camp Benning.

TUSKEGEE RAILROAD

6	4	2	Mls.	Daily Service Effective Nov. 5, 1922	1	3	5
PM	PM	AM			AM	PM	PM
7 13	4	2 10 08	0	Lv Chehaw Ar	9 25	1 00	5 50
7 33	2 02	10 28	5	Ar Tuskegee Lv	9 05	12 40	5 35
7 43	2 12	10 38		Ar Tuskegee Ins. Lv	8 55	12 30	5 25
PM	PM	AM			AM	PM	PM

Connects at Chehaw with Western Ry. of Alabama. Central Time.

BIRMINGHAM & SOUTHEASTERN RAILWAY

24 Daily	10 Daily Ex Sun	26 Daily	22 Daily	Effective Nov. 5, 1922	11 Daily Ex Sun	25 Daily	21 Daily	23 Daily
GM	AM	PM	AM		PM	PM	AM	PM
------	9 30	------	------	Lv Union Spgs. Ar	8 30	------	------	------
------	11 00	------	------	Ar Milstead Lv	6 55	------	------	------
1 45	11 10	6 55	9 15	Lv Milstead Ar	5 30	6 05	8 55	1 05
2 10	11 40	7 20	9 40	Ar Tallassee Lv	5 00	5 40	8 30	12 40
------	2 30	------	------	Lv Tallassee Ar	4 30	------	------	------
------	3 25	------	------	Ar Eclectic Lv	3 30	------	------	------
PM	PM	PM	AM		PM	PM	AM	PM

Trains Nos. 22 and 24 will wait on connection at Milstead, Ala., when reported not more than One Hour late.

Train No. 26 will wait on connections at Milstead, Ala., when reported not more than Two Hours late.

Train No. 11 will wait on connections at Milstead, Ala., when reported not more than One Hour late.

ATLANTA, MONTGOMERY, SELMA, MOBILE AND NEW ORLEANS.

READ DOWN — **READ UP**

No. 19 Daily	No. 17 Daily	No. 41 Daily	No. 37 Daily	No. 39 Daily	No. 33 Daily	No. 35 Daily	Miles	CENTRAL TIME	No. 38 Daily	No. 40 Daily	No. 34 Daily	No. 36 Daily	No. 42 Daily	No. 18 Daily	No. 20 Daily
AM	PM	PM	PM	PM	AM	AM			AM	PM	PM	PM	AM	AM	PM
7 40	4 05	5 35	6 10	1 25	8 30	6 00	0	Lv Atlanta Ar	11 00	2 20	6 45	11 25	8 15	10 45	7 45
					f 8 45		6	" East Point Lv			f 6 26				
c		5 53		1 45	8 50		9	" College Park "			6 21		7 44		c
		f6 00			f 8 58		12	" Red Oak "			f 6 14		f7 35		
		f6 06			f 9 04		16	" Stonewall "			f 6 08		f7 29		
		f6 10		f 2 03	f 9 07		17	" Union City "		f 1 41	f 6 04		f7 25		f7 12
f8 15	f4 43	6 15		2 09	9 12		18	" Fairburn "		1 37	6 00		7 21	10 03	7 08
f8 27	f4 56	6 27		2 23	9 24		25	" Palmetto "		1 26	5 48		7 09	9 51	6 55
		f6 37			f9 33		30	" McCollum "		f 1 17	f 5 37		f7 01		
		f6 42			f9 40		33	" Madras "		f 1 12	f 5 32		f6 56		
8 50	5 20	6 52	7 19	2 46	9 52	7 04	39	" Newnan "	9 52	1 00	5 06	10 13	6 45	9 30	6 30
		7 10		3 03	10 13	f 7 20	45	" Moreland "		12 36	4 54		6 25		
		7 21		3 14	10 25	7 29	51	" Grantville "		12 24	4 41	f 9 48	6 14		
		f7 28		f 3 21	f10 32		55	" Trimble "			f 4 29		f6 05		
		7 35		3 27	10 38	7 40	58	" Hogansville "		12 08	4 23	f 9 36	6 00		
		f7 47		f 3 39	f10 50		64	" Louise "		f11 54	f 4 09		f5 48		
		8 00	8 19	8 55	11 06	8 05	71	" LaGrange "	8 55	11 42	3 55	9 13	5 37		
		f8 14		f 4 11	11 26		80	" Gabbettville "		11 26	3 36		f5 22		
		8 30	8 45	4 26	11 42	8 30	87	" West Point "	8 30	11 15	3 25	8 45	5 10		
					f		88	" Lanett "			f				
				4 45	12 01	8 53	98	" Cusseta "		10 53	2 59				
			9 30	5 10	12 26	9 18	109	" Opelika "	7 50	10 34	2 40	8 02			
				5 24	12 39	9 31	116	" Auburn "		10 19	2 22	7 47			
				5 37	12 51	9 43	123	" Loachapoka "		10 06	2 08	(b)			
				5 48	1 01	9 54	129	" Notasulga "		9 54	1 56	f 7 26			
				6 02	1 13	10 09	136	" Chehaw "		9 38	1 42	7 13			
					f 1 19	f10 14	139	" Cloughs "			f 1 34				
				f 6 12	f 1 23	f10 18	141	" Franklin "		f 9 22	f 1 30	(b)			
				f 6 16	f 1 27	a	143	" Baldwin Farms "		f 9 19	f 1 27				
					f 1 33	f10 25	145	" Hornady "		f 9 14	f 1 21				
				6 28	1 40	10 32	148	" Milstead "		9 08	1 15	6 51			
				6 41	1 52	10 44	152	" Shorters "		8 57	1 03	6 41			
				f 6 46	f 1 57	f10 49	154	" Tysonville "		f 8 52	f12 58				
					f 2 09	f11 01	161	" Mount Meigs "		f 8 40	f12 46				
				f 7 00	f 2 13		163	" Cook's "		f 8 36	f12 42				
					f 2 22		168	" Madison "			f12 33				
			11 15	7 25	2 40	11 35	175	Ar Montgomery Lv	6 05	8 15	12 20	6 05			
								Via L. & N. R. R.							
			11 50	8 40		12 05	175	Lv Montgomery Ar	5 42	7 20		5 41			
			6 00	6 00		5 00	337	Ar Pensacola Lv	10 45	10 45		12 30			
			4 55	2 55		5 12	354	" Mobile "	12 45	1 35		12 43			
			9 25	7 30		9 45	494	Ar New Orleans Lv	8 25	9 05		8 30			
AM	PM	PM	AM	AM	PM	PM			PM	PM	PM	AM	AM	AM	PM

PULLMAN FARES REQUIRED ON THIS TRAIN

No. 39 Daily	No. 43 Daily	Miles	(SELMA DIVISION)	No. 34 Daily	No. 36 Daily
PM	AM			PM	PM
8 30	7 30	175	Lv Montgomery Ar	12 05	5 25
f 8 47	f 7 47	182	Ar Stones Lv	f11 44	f 5 04
f	f	185	" Cantelou "	f	f
f 8 57	f 7 58	188	" Manack "	f11 30	f 4 50
f 9 00	f 8 01	189	" Burkeville "	f11 25	f 4 45
9 08	8 12	194	" Lowndesboro "	11 15	4 35
9 19	8 24	200	" Whitehall "	11 02	4 22
9 30	8 37	206	" Benton "	10 48	4 08
f 9 41	8 48	212	" Tyler "	f10 35	3 56
10 20	9 20	225	Ar Selma Lv	10 10	3 30
PM	AM			AM	PM

Trains do not stop where no time is shown. f—Flag Station.

No. 35 stops at College Park, Fairburn and Palmetto to take on passengers for Montgomery and beyond.

Trains Nos. 37 and 38 ("NEW YORK-NEW ORLEANS LIMITED"). No baggage handled to points between Atlanta and Montgomery except through baggage received from and to points beyond. c—Stops on flag to receive and discharge passengers to and from stations beyond Newnan.

(a)—Flag stop to discharge passengers only. (b)—Stops to discharge passengers from Montgomery and beyond.

Connections are made at Chehaw with Tuskegee Railroad for Tuskegee. Schedules on page 2.

Connections made at Milstead with Birmingham & Southeastern Ry. for Tallahassee, Eclectic and Union Springs. Schedules Page 2.

THROUGH CAR SERVICE

Nos. 37 and 38—"NEW YORK—NEW ORLEANS LIMITED"—No Coaches. Solid Train between New York, Atlanta and New Orleans. Club Car, Dining Car and Drawing-room Compartment Sleepers. Observation Car Washington and New Orleans. Washington-San Francisco Tourist Cars (West Bound). Parlor Cars between Atlanta and Montgomery, also Local Sleepers Atlanta and New Orleans, Montgomery and Pensacola, Montgomery and Mobile.

Nos. 35 and 36—"UNITED STATES FAST MAIL"—Drawing-room Sleepers between New York and New Orleans. Parlor Car, Atlanta and Montgomery. Day Coaches. Dining Car Service.

Nos. 39 and 40—Sleepers between Washington and Atlanta, Montgomery and New Orleans. Day Coaches. San Francisco-Washington. Tourist Car (East Bound).

CONDENSED SCHEDULE OF THROUGH TRAINS

NEW YORK, PHILADELPHIA, BALTIMORE, WASHINGTON, ATLANTA, MONTGOMERY, MOBILE, PENSACOLA AND NEW ORLEANS.

Pennsylvania R. R., Southern Ry., A. & W. P. R. R., The W. Ry. of Ala., L. & N. R. R.

SOUTHBOUND			DRAWING ROOM AND COMPARTMENT SLEEPING CARS	NORTHBOUND		
No. 29-39	No. 35	No. 37		No. 38	No. 36	No. 40-30
AM	AM	PM		PM	AM	PM
9 15	12 45	5 05	Lv New York (Penna.Sta.) (ET) Ar	12 30	6 45	6 10
11 38	3 30	7 14	Lv West Philadelphia (ET) Ar	10 23	4 15	4 05
1 53	6 10	9 30	Lv Baltimore (ET) Ar	8 18	1 50	2 00
3 30	9 00	10 55	Lv Washington (ET) Ar	7 00	11 00	12 35
10 55	-------	5 30	Ar Atlanta (P'three Sta.) (CT) Lv	11 25	12 10	4 00
•	5 25	5 50	Ar Atlanta (Term.Sta.) (CT) Lv	11 15	12 00	•
1 25	6 00	6 10	Lv Atlanta (Term. Sta.) (CT) Ar	11 00	11 25	2 20
7 25	11 40	11 15	Ar Montgomery Lv	6 05	8 05	8 15
6 00	5 00	6 00	Ar Pensacola Lv	10 45	12 30	10 45
2 55	5 12	4 55	Ar Monbile Lv	12 45	12 43	1 35
7 30	9 45	9 25	Ar New Orleans Lv	8 25	8 30	9 05
AM	PM	AM		PM	AM	PM

•-Transfer of passengers between Peachtree Station and Terminal Station, Atlanta, for these trains is made by cab or omnibus. Passengers make their own arrangements.

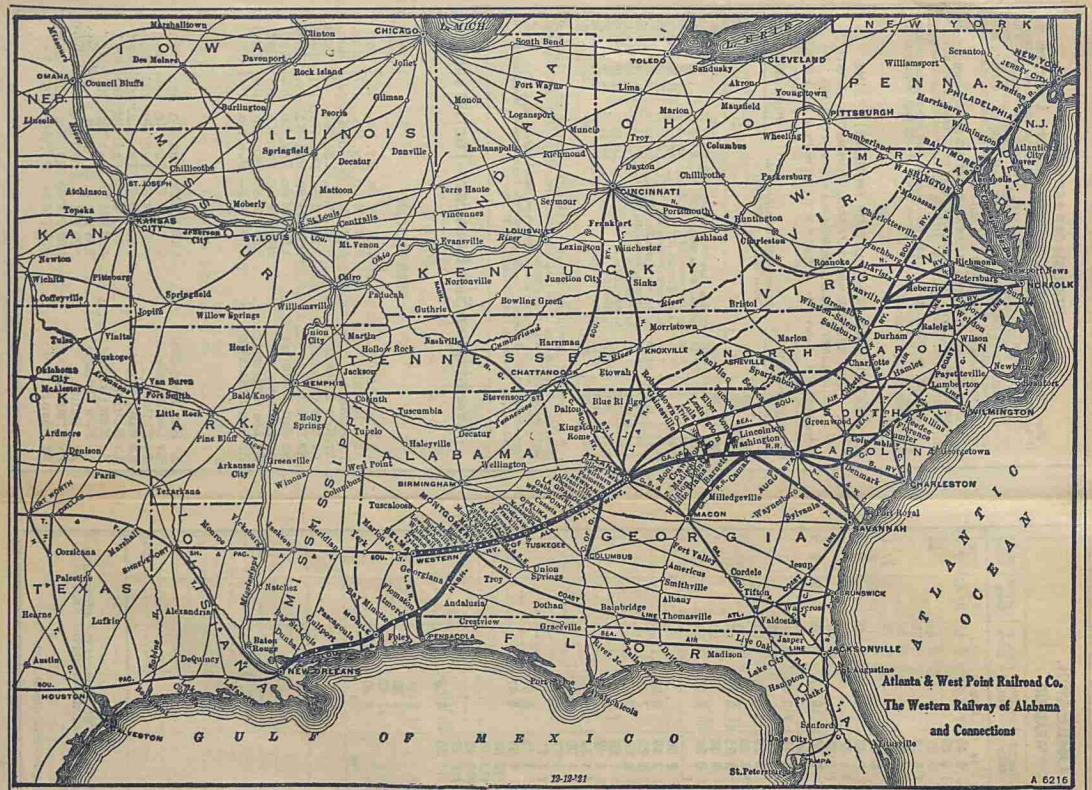
Train No. 38 figures above, between Washington and New York, are daily except Sunday. On Sundays this train leaves Washington at 8:05 A. M. Arrives New York 1:30 P. M.

Washington-San Francisco Tourist Car.

DAILY

WESTBOUND			Daily Example
Lv Washington	10:00 PM	So. Ry. No. 137	Sun.
Ar Atlanta	4:50 PM	So. Ry. No. 137	Mon.
Lv Atlanta	6:10 PM	A.& W.P.No. 37	Mon.
Ar New Orleans	9:25 AM	L. & N. No. 37	Tues.
Lv New Orleans	12:10 PM	So. Pac. No. 101	Tues.
Ar Houston	10:40 PM	So. Pac. No. 101	Tues.
Ar San Antonio	4:59 AM	So. Pac. No. 101	Wed.
Ar El Paso	9:45 PM	So. Pac. No. 101	Wed.
Ar Los Angeles	9:30 PM	So. Pac. No. 101	Thurs.
Ar San Francisco	1:00 PM	So. Pac. No. 101	Fri.

EASTBOUND			
Lv San Francisco	5:00 PM	So. Pac. No. 102	Sun.
Lv Los Angeles	8:30 AM	So. Pac. No. 102	Mon.
Lv El Paso	9:50 AM	So. Pac. No. 102	Tues.
Lv San Antonio	3:20 AM	So. Pac. No. 102	Wed.
Lv Houston	9:30 AM	So. Pac. No. 102	Wed.
Ar New Orleans	7:35 PM	So. Pac. No. 102	Wed.
Lv New Orleans	9:05 PM	L. & N. No. 2	Wed.
Ar Atlanta	2:20 PM	A.& W.P.No. 40	Thurs.
Lv Atlanta	4:00 PM	So. Ry. No. 30	Thurs.
Ar Washington	12:35 PM	So. Ry. No. 30	Fri.



GENERAL INFORMATION

These companies are not responsible for errors in time tables, inconveniences or damage resulting from delayed trains or failure to make connections; schedules herein are subject to change without notice.

Buy Tickets before boarding trains and avoid payment of extra charge.

Children under five years of age free when accompanied by parent or guardian, five years of age and under twelve, one-half fare; twelve years or over, full fare.

Adjustment of Fares: In cases of dispute with Conductors or Agents, pay the fare required, take receipt and communicate with J. P. Billups, General Passenger Agent, Atlanta, Ga.

Redemption of Tickets: Tickets unused, or partly used, will be redeemed under tariff regulations at proper value.

Baggage Maximums: No single piece of baggage exceeding 250 pounds in weight, or 72 inches in greatest dimensions, or single shipments exceeding $2.500.00 in value will be checked. Free allowances subject to tariff stipulations as to contents, weight, value and size.

Liability Limited: Excess value to be declared and paid for at time of checking. **Bicycles (not Motorcycles), Baby Carriages, Dogs and Guns** are transported in baggage cars subject to tariff regulations.

Lost Articles to be inquired for at offices of Superintendent of Transportation, Atlanta, Ga.

No Responsibility is assumed for unchecked articles left in stations or cars.

Only One Coupon is required between any two points on this system, such coupon to read "Atlanta & West Point Railroad—Western Railway of Alabama."

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A. & W. P. R. R. ..... Atlanta, Ga.
Steiner, Crum & Weil, General Counsel,
The W. Ry. of Ala. ..... Montgomery, Ala.
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L. J. Marbry, Chief Traveling Auditor ..... Atlanta, Ga.

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S. R. Young, Asst. Chief Engineer ..... Atlanta, Ga.
H. W. Seib, Consulting Engineer ..... Atlanta, Ga.
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E. S. Center, Jr., Agricultural Agent ..... Atlanta, Ga.

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F. G. Bennett, General Agent ..... Montgomery, Ala.
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A. J. Taylor, Traveling Freight Agent ..... Winston-Salem, N. C.