

The building of a state

Congratulate North Carolina on her marvelous progress - 3rd in cotton mfg and 2nd in tobacco

Cotton Mfgs increased over 3500 per cent in 37 years

Common Schools High Schools Colleges & University

What marvelous opportunities have been opened for the people

A Commonwealth is strong not in proportion to its few wealthy men but the prosperity of her masses - ^{tailors} ~~Masses successful according to equipment~~ _{& kinds}

One of the great problems for a people is the production and the distribution of wealth ~~another~~ is the direction and the diffusion of education

Every factory built -
Every RR built - or extended
Farm improved
New markets.
Waste & straw crops forests
fish See it } wood alcohol & By
products coal.
Boy or girl educated

Distribution of wealth
In Earnings
Mechanics
Farmer laborer

Turners 2 1/2 times Capital
Time many workers produce
less

Take individuals
Majority of Southern
States 250,
over 1200,

This difference of the earnings of individuals extends to states

	cows per farm	sales	Cattle
Me	1	3	2
SC	1	2.20	2 ² / ₄
Ala	1 1/4	4	2 3/4
Miss	1 1/3	3.50	2 3/4
Geo	1 1/4	4.75	3
Ny	7	200 -	9
VT	8	275	12
Wis	6	125	10
Iowa	6	88	18

Dairy - Poultry

European States

Denmark Holland Italy

2 kinds of economies
 one the best & the other the least that
 will answer
 The best always in demand
 Dairy - Beef poultry - Horses

4
Now we understand
Why the young men
leave the farm

This can not continue
Living simply by tillage
means poverty

What is the remedy

- 1 Reform the books - the
schools the colleges - all
right &c
- 2 Educate the children
Teach agriculture in the
common schools
Shortening process
- 3 Demonstration work
Consolidate the schools
School by work
Girls work
Garden Poultry-yard
lawns -
House keeping
Beans &c Purchase food

5
How the state can aid
in addition

Animal Industry
Horses Dairy Poultry

Horticulture
Establish orchards
Keep healthy Trees - Prune
& Care
Roads & Ships

Forestry & Conservation

Fish

6
Taxation & valuation
on wrong basis
lands - timber - money

Transportation problem
Highways

mails R.F.D. Parcels
Deposits

Too much money for
speculative purposes
should be invested in
industrial works

What constitutes a
great Commonwealth
When every product is
brought to its highest value

When every thing is done
in the best way

Transportation reduced
to its lowest cost -

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
FARMERS' COOPERATIVE DEMONSTRATION WORK.

RENOVATION OF WORN-OUT LANDS.

IN VIRGINIA.

The importance of restoring worn-out lands by some economic plan can not be over-estimated. The method by which this can be done the most economically can only be determined by practical experiment. The general plan of trying to raise a crop and increase the fertility at the same time is the proper method, provided the land will produce a paying crop without adding too much fertilizer. There are thousands of acres that will not do this and hence it is necessary either to use a large amount of stable manure or commercial fertilizer, or turn under green crops. Many experiments seem to show that the turning under of green crops in large quantities is the most economical and that it is more economical to devote the land for one year to this purpose than to accomplish the end by slow processes through a series of years.

SELECTION OF LAND TO BE TREATED.

The land for demonstration under the following plans should be even in soil. That is, no very poor hills nor rich valleys, because these would not afford a fair comparison. It should be worn-out uplands that were once fair producers but are now so impoverished that they do not yield paying crops of corn or grass. The tract should contain fourteen acres.

divided into seven plots of two acres each, each plot about even with the others in soil and condition. If this much land can not be secured in one tract, part may be in one place and part in another provided all tracts are about equal.

On these tracts we advise the carrying out of the following methods:

Plot 1.- Break the land at least eight inches deep early in September if possible, being careful to use either a disc plow or a turning plow with narrow furrows so as not to turn up too much subsoil. If the turning plow is used simply set the furrows on edge. Scatter upon the land 1,000 lbs. per acre of caustic lime, then disc thoroughly. Early in October disc again and scatter 200 lbs. of high grade acid phosphate. Then sow a bushel and a half of Klondyke wheat or some other known hardy variety that stools well. The following spring plow under the wheat from the 10th to the 15th of May and sow to buckwheat at the rate of a bushel per acre. Use the silver-hull variety. July 15th, or as soon as the buckwheat begins to bloom, plow the crop under eight inches deep and sow again to buckwheat. September 15th, or as soon as the buckwheat begins to bloom, plow the crop under, (flat break) four inches deep. Harrow well and sow one-half the tract to wheat, same variety as before, and the other half to grass, using the following mixture and quantities per acre:

- 7 lbs. tall meadow oat grass.
- 7 lbs. Italian rye grass.
- 10 lbs. red top.
- 8 lbs. Mammoth, or saplin clover.

Turn the half plot sowed in wheat under the following spring in time for corn, and plant to corn.

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You will note that Plot 2 is to be treated exactly like Plot 1, excepting that sorghum is used in place of buckwheat.

Plot 3.- The treatment recommended for this plot is for use where it is impossible to make fall preparation.

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It will be noticed that the directions for treating Plot 4 are the same as for Plot 3, with the exception that sorghum is sown instead of buckwheat.

Plot 5.- Break land shallow as early in the spring as practical and sow to oats, first using 250 lbs. of high grade acid phosphate. This should be applied before the land is plowed. From the 10th to the 15th of May turn under the oats (flat break shallow), and sow to buckwheat at the rate of a bushel per acre, using the silver-hull variety. July 15th, or as soon as the buckwheat begins to bloom, plow the crop under eight inches deep and sow again to buckwheat. September 15th, or as soon as the buckwheat begins to bloom, plow the crop under (flat break) four inches deep. Harrow well and sow one-half the tract to wheat, using a bushel and a half of Klondyke or some other known hardy variety that stools well, and the other half to grass, using the following mixtures:

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It will be noted that the treatment recommended for this plot is like that given for Plot 5, with the exception that phosphate is omitted.

Plot 7.- Break the land as early in September as practicable with a common stirring plow, about eight inches deep, then subsoil six or seven inches deeper. Then scatter a ton per acre of caustic lime and disc in. Sow one-half the tract

to crimson clover, using 500 lbs. of raw bone per acre, and the other half to grass, apply 500 lbs. of raw bone per acre and use 25 quarts of grass seed per acre, divided into five parts, 2 parts timothy, 2 parts hard grass, and 1 part saplin clover. Add 8 lbs. of alfalfa. Plow the crimson clover under in the spring and plant to corn.

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*Charlotte Jan 11
1910*

NORTH CAROLINA.

HOW TO MAKE A STATE IN WHICH THE RURAL MASSES WILL PROSPER.

---oOo---

There are two ways to make a great and prosperous common-wealth. First, for every man to do his best in his appointed sphere, for the farmer to develop and perfect his farm and make it a profitable source of revenue, a delightful home, and from it to draw the means that will enable him to meet his share of the expenditures necessary to call into existence the great public utilities for a high civilization. Under this plan every citizen is bound to do his best and contribute his share. From this standpoint there must be no looseness; no idleness, rich or poor; no strikers; and no squandering of money for mere pleasure without an ultimate good. This plan I discussed in Virginia. It is the individual plan where labor leads.

THE MORE MODERN AND COLLECTIVE PLAN, WHERE CAPITAL LEADS.

The second plan of making a great common-wealth is one in which capital goes in advance. The great railroads penetrate the country and pave the way to settlement; the lands are drained or irrigated, as the case may be; great reservoirs are made at the sources of streams; forest reservoirs are established; water power utilized and irrigation on many tracts made possible.

North Carolina,---2

There is a third plan which is the one which we have in part followed and it should be properly called the plan of wreckage:- Turn the people loose on a fair domain to do as they please without law or experience; valuable timbers destroyed, soils are wasted, rivers are silted and filled with debris. Finally the rainfall becomes irregular; great floods and great drouths follow. Everything is done for temporary gain, regardless of the rights of posterity. It is not too late to remedy this evil, and let us apply the remedy of the second plan,- the use of capital in making a great State. The most expenditure of capital is for the control of the water, both the rainfall and the soil water. This we can treat under three heads:

- 1.- Regulating the water supply in the rivers, the great natural drainage arteries.
- 2.--Reservoirs at the sources of the large and small streams.
- 3.- Re-foresting and conserving the timber and willowing the small streams.

Discuss the effect of these on regulating the flow of rivers. The effect of the reservoirs can be readily understood.

North Carolina,---3

In order that we may have some adequate comprehension of trees, I call to your attention the experiment of Valliant. He found that a single oak sixty-nine feet high, two feet, ten inches in diameter, thirty-nine inches from the ground, took from the soil and passed into the atmosphere one hundred thirty-two tons of water in a season. An acre of such trees would take from the soil and pass into the atmosphere five thousand, two hundred and eighty tons of water during the leaf period and the leaves in addition would retain upon their surfaces about one-fourth of the rainfall, making in all that the trees would dispose of about eight and a quarter inches of water over the entire surface. In addition, the roots of the trees add to the porosity of the soil and enable a large amount of the water not disposed of to be somewhat permanently retained by the soil. The evaporation from the surface of reservoirs and ponds averages about ten to fourteen inches during the five months from May 1st to October 1st. Now this vast body of water sent up by the trees and taken from the reservoirs produces an enormously cooling influence on the atmosphere so that they discharge the clouds and regulate the annual rainfall. The effect of this would be increased ~~perspiration~~ ^{precipitation} in the warm weather and warmer in the winter and this means evaporation because it requires a

North Carolina,---4

thousand degrees of heat to pass into vapor and in freezing when the vapor passes into solid it gives off a thousand degrees of heat, consequently it greatly modifies the temperature in spring and fall, and tends to make certain fruit conditions. It is the sudden changes both spring and fall that are so injurious to the fruit crop.

The willowing of the banks.

The second great undertaking is the drainage of the lowlands. The total area in North Carolina is 31,193,000 acres; the cultivated area is only 5,769,954 acres; the number of acres requiring drainage is 2,748,160, or nearly one-half of the total area cultivated at the present time.

Let us take a little inventory of our estate. Over one-half is timber but mostly poor timber. A great deal of the best timber has been selected and sold for a trifling amount. One fourth is improved; one-sixth cultivated, that is, one-sixth of the entire area must pay the taxes on the five-sixths and support our entire civilization.

Of the vast body requiring drainage we have only classed in the list such as are unproductive without drainage. Nearly

North Carolina,---5

all lands require more or less drainage. We are liable in draining this great body to make some mistakes. First, the drainage is too trifling. That is, the great arteries are not wide enough and deep enough to carry the surplus rain of the season and hence at the very time that we require the drainage the water is held on the land by the lack of sufficient outlet. I therefore suggest in taking up this problem:

First, that the main drains be made wide and deep, how wide and how deep must depend on the area to be drained.

In providing this drainage the main arteries should be made navigable so that they accomplish three things:

- 1.- They must drain the country.
- 2.- They must answer as a canal for transportation.
- 3.- In a limited way they can be used for irrigation for certain crops that require it.

It is only necessary to have a small lock at the outlet and this lock, when it opens into an arm of the sea, would prevent the salt water from flowing in and would hold the water at a sufficient depth for transportation.

North Carolina,---6

Speak of my experience in drainage business and the cost of canals, etc.

Notwithstanding that North Carolina has an unusually good rainfall and mainly evenly distributed, at the same time there are seasons of the year when certain crops would do a great deal better if there was a little more rain, hence to a certain extent irrigation is exceedingly valuable.

If the State should follow the same rules of some of the Western states the main cost of this drainage would be assessed to the adjacent lands because they are to reap the immediate benefit, although a small amount should be paid by the State because the State receives some benefit in every case.

These lands properly drained would be worth from \$50 to \$100 per acre and perhaps more. A great many of these lands would be excellent for rice, one of the best staple foods of the world.

Other portions would make first quality truck garden lands. In fact, they will produce abundantly of most any crop, cereal

North Carolina,---7

or grains and would find ready purchasers and absolute owners for improvement. Take the Central portions, quite a good many acres could be irrigated, adding a large per cent to the value.

I apprehend that in North Carolina the making of the reservoirs in the mountains, the willowing of the small streams to prevent silt, and the damming of the rivers where necessary to secure waterfall, would create sufficient power for all the purposes of the state,- heating, lighting, transportation, and manufactures. That is a wonderful statement but I think it is correct.

In the western region, and especially if the reservoirs are made as required and the steep hillsides reforested, is a remarkable region for fruit, and it would be worth vast sums of money if the fruit industry could be developed.

Men of North Carolina, do you realize what a wonderful state you have? These rich swamp lands of the Eastern Coast, so close to the Atlantic, so penetrated by rivers, so accessible in every way, and then the rich central lands adapted to

North Carolina,---8

general farming,- to cotton and corn and grass; and then the wonderful hill lands for fruit and for dairying and for other things; and practically you are using only about one-sixth of the State and you are getting about one-third of the crop out of the one-sixth, making one-eighteenth of what you ought and you are trying to get rich by using one-eighteenth of your territory.

Now, the next great undertaking, corpora^{ti} or individual, is the transportation problem. Some of your rivers can be made navigable and the great canals in the east I have mentioned. Of course we must depend for transportation in the Central and hill regions upon railroads and good stone roads. I have always believed that the railroad interests made a mistake in undertaking to build too many small branch lines on the same plan as their large lines. We will say that the main lines are the best for long hauls and for heavy loads, but there is a great deal of lighter railroading where the problem is to collect it from the separate farms and concentrate it in a sufficient body to be profitable to the railroads, and I look at that as perhaps the chief problem of to-day,- How to get the produce from the farm to some central point?

This must be solved by light electric lines, by good stone roads or macadam roads or even in a few cases by dirt roads.

North Carolina,---9

As stated at the outset, one way is for the farmers to go to work, to develop their farms and then pay all these expenses. The other way is to incorporate, to borrow the money on long time and construct the main part of these improvements that are necessary and thus put the state immediately upon a live basis. The very fact that North Carolina undertook this enormous problem of drainage and of road-building and of damming the sources of the rivers,- not do it all at once but undertake it, with a view of completing it within a certain period of years,- would attract such a tide of immigration to the State as would put your lands almost out of reach.

There is nothing that so attracts capital as capital, because capital means the ability to do things, and the moment the people show the ability to do things capital is willing to back them.

Thus equipped North Carolina would become one of the greatest producing states and one of the greatest manufacturing states in the Union. It would be possible under such conditions to produce a billion dollars worth of products upon the farm and a billion dollars from her factories in

North Carolina,---10

a single year, and support a population of ten millions of people.

Here are the problems that are before you. If your people have the daring to commence; to plan wisely and carefully but to prosecute the plans with vigor and towards a definite end, I predict a very great future for the old North State.

(2)

Address of Dr. Seaman A. Knapp,

delivered at Greenville, S. C., Jan. 12th 1910.

Introduction by Mr. Thos. F. Parker--

"I have been honored in being asked to make a few statements.

What we want in South Carolina; what we want around Greenville, in addition to what we have, is Progress. We want leaders; we want men men who have done things, men who can tell us how.

When the United States was looking for a man who could do things, who could stop the panic which was being caused by the boll-weevil, who could show the men of the section where it was doing its work how they could make a success of farming, in spite of the ravages of the boll weevil; when the Southern Railway Company was looking around for a man who could best speak to the farmers and tell them what to do, they found the same man. When the South Carolina Cotton Manufacturers Association, in its interest for better cotton, looked around, it picked on the same man. Now he is here to-day as a practical man, as a man who has been over the greater part of the United States; as a man who has been over a large part of Europe. Not as a man of theory only, but as a man who has actually accomplished, who has proven his theories. He has been thirty years in the South. He comes as one of our own; he comes, a man accustomed to our conditions.

I take great pleasure in introducing to you Dr. Seeman A. Knapp."

Dr. Knapp's address--

"Mr. Chairman, and gentlemen:

Week before last I was in the State of Missouri, and they were so liberal as to send the cold away with me. I am trying to get over it and I think if I am a little while in your delightful atmosphere,

I shall soon be rid of it. I trust I may be heard to the rear of the room; I shall endeavor to speak so you can hear me.

My friends, I am not here to-day to tell you more than you probably know; that is a mistake. The people in every State know enough to work out all problems of Agriculture. However, it is just like morals; they know enough, but the thing is to live up to what they know. And that is my object,- to arouse people, and awaken them and show them their opportunity and tell them how they can live up to it if they will. We sometimes sleep on our opportunities.

I remember in Texas for a number of years a piece of property, that was ultimately worth one million dollars an acre because they found oil under it, went begging, seeking a buyer at four hundred dollars an acre; no one wanted it. Since it has become worth a million dollars, everybody wanted it. You are somewhat in that condition here, in this Piedmont Section. I remember many years ago when history simply alluded to your section as "the tough, red-clay lands of the Carolinas"; now they allude to the same section in the terms of "the fertile lands of the Piedmont section"; and by and by when the full value of this wonderful section is made known to the world, they will allude to it in the exaggerated language of "the marvelously, superbly, abundantly producing section of the Piedmont".

Nature put the mountain on the Northwest to protect you from the extreme cold of the North and left your sunny slopes towards the South; she covered the mountains with timber to give you rain-fall and protect the moisture so that you could produce things in abundance. And it is only for man to take advantage of his opportunities to have the garden spot of the world.

Some say Eden was here; I think not. If it had been here, Adam would never have been driven out of it, and you would still have a garden spot. But because he was not here he was looking for

a better spot and started for the Piedmont Section.

Now, I want to tell you just a few simple truths as we go along; and it is only a talk among my friends. I have the happy feeling when I am in any State that I am a native of that State, that I am a part of it and that the people are all my brothers. That is the way I feel in this State. I am going to talk to you as I would talk to my brothers.

Life has been very easy in the United States. We have come to the period of permanent high-prices. We shall never return, in my judgment, at least not in centuries, to the cheap labor of the past. I am glad of it, and I will tell you why. Another truth I wish to tell you to-day is that life is going to be more strenuous than it has been in the past. It has been too easy to get land. Whatever comes so easily, whatever is acquired with little labor, we value very low. Why is it going to be more strenuous? First, because there is a marvelously great demand for human labor and labor is going to be higher. The accumulation of gold, the world's money, is setting all the world to work; and industries are being created, demanding an immense amount of labor that did not exist thirty years ago or forty years ago. Take the single instance of the Railroads; they are now employing about two million people; fifty years ago they employed scarcely no one; the same with the factories. So you see, the new era upon which we have entered demands a greater amount of labor. Consequently, they enter into the market; there is strong competition and labor is bound to be higher. Labor has doubled all over the world; it is not confined to the United States. And I have not heard of a single civilized country where there is enough labor.

Another thing, property is going to be high. The boy thirty years ago who, with a good constitution and fair education, could buy a farm simply by his own toil cannot do it in the future when lands will be worth from fifty to one hundred and fifty dollars per acre. It is going to be more strenuous. And the problem to-day is how to overcome this new condition of things, to have a square

deal, and a square and successful fight to the end.

And there is another condition confronting us. Nearly two-thirds of the population of the earth is barbarism, and barbarism means low condition of life; and even in the semi-civilized countries it costs very little to live. In British India a dress will cost about 16¢, a ~~silk~~ dress. It means four yards of the lowest grade of cotton cloth simply wound around the loins. By the rapid transit of the railroads and our new steam rangers of the ocean with their vast tonnage, you can bring freight almost as cheap from Asia, from the Philippine Islands, from Africa and from Europe to our coast line as you can from Central United States. I know a number of things that I can transport to those foreign countries from Washington as cheaply as I could transport them from Texas to Washington, because the the ocean transportation is so cheap. Consequently, we have navigated the Atlantic Ocean and the Pacific Ocean until we are able to profit thereby. It is all by the use of man's opportunity. ~~We~~ ^{We} have neglected to take advantage of the powers of nature.

I find that one man in Louisiana and Texas can do as much as eighty men in Japan or as much as two or three hundred men in China, where the work is done by hand. It seems that if we hold to the methods of doing all work as in the past days on our farms, we are gone. By the use of more horse-power, more machinery, rapid machinery and the better methods, one man can do the work of eight, or ten or twenty men, or at least the work that eight, or ten or twenty men did fifty years ago. We are going ~~n~~ to over-come these problems and show our supremacy as a nation. Whoever undertakes to dig out his life work with a hoe is a back number. Whoever thinks that he can make a living for a family by simply toiling with his own hands, has made a mistake. He must harness to his brains the horse-power that is given to us under modern machinery; he can then do the work of eight or ten men in the fields. Some man has said, we have not labor enough. We have not, indeed, if we continue to do our work as

we do it to-day. If we do it in the right way, which enables a man to do the work of ten or fifteen men, we have plenty of labor. We want labor made more intelligent and more careful and want to understand the problems of right working.

I thought I would talk to you this morning a little about education; because, you see, as I have outlined it, the greatest thing to acquire is knowledge; the right kind of knowledge and how to use it. That is what we are all seeking after,- Education. And while one community is lower than another is because they have not learned what they ought to have learned, or have no faith in what they have learned so as to apply them. We need the education that carries conviction and makes the man feel that he must follow that plan and work out the problem that way.

There is nothing the matter with this country; it is a great country. There is nothing the matter with this people; you belong to the greatest race that ever inhabited the globe. What is the matter? I do not think there is anything the matter. You have gotten such a high price for cotton this year, I guess every man in this house is a millionaire. I am glad. I hope you will continue so. I am in favor of cotton as the greatest cash crop of the world that I am acquainted with; but we are not raising enough of it. I notice from the statistics that demand for cotton in the United States is doubled every twenty-two years. We produce seventy per cent. of the cotton of the world. ~~Then~~ Then twenty-two years ago thirteen million bales was all that was wanted; twenty-two years before that six and one-half million bales was wanted; and twenty-two years before that a little over three million, and twenty-two years before that one and one-half millions. Thus, twenty-two years from now ~~will~~ the world will want twenty-six million bales of cotton; forty-four years from now the world will want fifty-two million bales from the United States. How are we going to produce it.

In this period we wear a great many more clothes and every man

consumes more than he used to. A large part of the world went almost without clothing. As modern civilization penetrated the interior of those vast domains of the Orient, the law has compelled them, and custom also, to wear clothing. And as people become wealthy they wear more clothes. You must remember, I can remember, that fifty years ago it was a common thing for people to wear patched clothing. Since you have become multi-millionaires selling cotton, you do not wear patches, not a man in this house has a patch on his clothes. If you will consult the statistics you will see that you are using more clothes.

There are various kinds of cotton; some of it mixes well with wool and when we buy woollen goods it is almost one-half cotton. There is still another variety which mixes well with silk and so it is mixed in that way.

We used to think that we could buy fine olive oil; the finest to-day is raised in South Carolina, - cotton seed oil. There is nothing wrong with it; it is just the question of using it; it is just as good for the stomach, just as good for the race.

But to the question of education, as I have before stated. What kind of education? We have a good deal of education, all of which is valuable, understand me to say. I am going to talk from another standpoint but I do not want anybody here to say that I am opposed to the present means of education. I think the universities of the United States have done a great work; the Agricultural Colleges of the United States have done a great work, but we have asked too much of them. It was so much that they did not have the time or money to do it. Some say what shall we do in view of the condition of things and the increase of land. The reply is: Educate the people. I agree with that, provided we understand the word 'education' aright. About one in one thousand will go to college and be graduated in the University. What about the nine hundred ninety-nine who need the education

and cannot go to college; what will you do with them? We all must have an education; every man in the land. Now the kind of education that we need for these men, the best education, is what I call the 'artful side'. There are two sides to education, the 'scientific side', which gives the causes and all that; and the 'artful side', which shows how to do a thing. The average man, who is a power in the world, must get his education from the artful side and learn how to do things better. The scientific way gives the cause, etc., but that does not give the way to do things. To-day there is a cry all over the country for farm managers; for several years I have been looking for a farm manager myself; one whom I could place in the management of my own farm; I have not found one yet. We could place in the United States fifty thousand farm managers in a short time. All sorts of people own farms, they cannot reside upon them and want a capable man to manage the farms for them., The man we want is the one who can do things, the man with the artful education who knows how to do things and to do them readily and successfully. It does not come in conflict with the scientific education but simply asks for the common man who knows how to plan and to do. Therefore, what we want; ^{we most need,} ~~that/the scientific side~~, is a training school. Not to take the place of the college, understand me. The college is doing a great work and there is room for all it can do and we need it because it gives the why and scientific causes; but we want a practical, training school in every County. What kind would I have? I would have a farm, say of one thousand acres; every building upon it should be a building with reference to the needs and ability of that farm to sustain the building. Every improvement should be of the durable and suitable kind and adapted to the farm; for one of the things we lack is the character of every farm improvement. Every fence goes to decay once in every five or ten years; they are too temporary. The waste-age and costs of renewal of fences alone is simply fabulous all over the country. If we would but go to a little expense at the time

they were made they would be durable; and it is just as important that the farm improvements should be durable as it is to make a good railroad so it won't have to be repaired each day and so it won't break down every few miles.

All this work on the farms should be done by the boys, for a man never learns a thing properly until he has done it. You can doubt what you say, and we generally doubt what we hear, but a man will not doubt what he has done. If he actually works out a thing he believes it. That is the object of our work. When once he has done it, he will believe it and cannot be argued out of it.

Thus we teach how to make a good crop every year; a best crop every year and no failures. It is possible to do that. We can fix our soil so that we can get a good crop every year. We can so select every seed and so cultivate the land that we get three or four times what the average man is getting to-day. And do you know what three or four times means? When you have increased the product four times, you have increased the profit ten times. The net profit is not in proportion to the increase of product. There are certain expenses upon the poor yield and upon the good yield; and upon the good ~~and~~ yield the expenses are only slightly in advance of those on the poor yield. So, if you increase the crop four fold you increase the net profit ten fold. Therefore, the problem of profit, and that is what we are after, -(if there is any one here not after solving the problem of profit, I am not talking to him) is an increase in your crop. Fix your soil right and leave it, and it will produce a larger crop next year. It does not require a number of books to tell you how, just a few simply little things, - three in number: The best seed bed, the best seed, and how to cultivate the land, - you have then solved this problem. And everybody can learn them if they will. We leave it to the Agricultural College to explain it to the enquiring mind; but the average man wants it from the artful side; how to get

it and how to get it quickly.

Now most people say that education should stop at sixteen years of age; that is a mistake. There are investigations going on, and problems being worked out, and discoveries being made as to new machinery, new seeds and new ways of doing things all over the world. Why should they not be taken to the living man of the farm? Is he not entitled to get them? All of the nations of the earth are studying how to wring more taxes from the people. Our study is, how can we make people so prosperous that taxes will never be a burden to be borne by them? Start from the other side; make land so productive that it will pay us; trust to American genius to be ready to anticipate the Government's actions, to be ready to do what the Government requires, and they will be ready. It is true that to get more profit out of the soil is to get more out of life. Every step of human progress costs money. Money is more than the measure of civilization, it is the measure of opportunity and accomplishment; and it all comes from the soil after all. Our problem is how can we make each man do the work of ten men and our acres yield four times more.

I want to speak of another thing,- this toiling six ~~days~~ out of seven, or even the whole seven days as I have known some people to do. This idea of farming all the time is wrong. The man who holds as his farming lands a part of the United States is not the biggest man but he is in proportion with his acres; he is a part and therefore a King; if he is a King then he needs leisure time. The only way for us to get leisure time is to get more horse power, so that we can have two or three days leisure time every week.

Some of the fundamental things to be taught are not found only in books that the average man need know. One is exactness. I have found ~~xxx~~ in handling large numbers of men that to be exact is not known to the common man. We owe a great debt of gratitude to the railroad people for running their trains on time; some of them,- some edge off on to eternity. But they mostly run on time and compel the people to be there on time; we certainly owe them a debt of grati-

tude.

We ought to inculcate, as a part of business methods, exactness, promptness and thrift. Some people when they have things do not know how to hold on to them, nor how to spend their money; they can do neither of these things properly. Many a boy who has scarcely any education, forges ahead of a college graduate because that boy has exactness, promptness and thrift. You will also find him in advance of many who have education but who lack these qualifications. There are some other qualifications which he should have. He needs to know how to make the best crop, if it is a grain crop; if it is stock he is raising, he should know how to raise the best stock and know the best way of feeding them; if it is fruit, he should know the best way to market that fruit. There are a great many business problems, because agriculture is about one-half business; I have often thought it was all business. The way we are trying to teach, and I feel our inadequacy this morning in view of the great number who need that teaching, is by means of the farm demonstration work. Show the man on the farm how to increase his crop three fold, three times greater than he is now making, and trust to him to carry out the method. Show him about this greater horse-power, this modern and more rapid machinery, and he will work out the problem for himself.

I am gratified at the interest the people have taken in this. When we first started out there were very few who took any interest in it. Gradually, as we went from State to State, they came out, manifested their interest and said 'that is the way to teach the people'. Now we ask the co-operation, - or we'll put it the other way and say^a we are willing to co-operate with any force you have in the State to make this State the greatest State of the Union. We wish to join hands with you, we are here to demonstrate and prove to you, not that we can do it but that you can do it under your circumstances and on your own farm.

Perhaps this is all that I need to say about men. There is

another line we have not taken hold of that ought to be taken hold of to compel this education. The women of the country require an education that adapts them to country life just as much as the men. The women attend to the early education of the children. And the amount of knowledge which any child has it acquires at an early age from its mother. It also acquires from her a language, and later from her is acquired its knowledge of the outer world. Furthermore, women spend the money to clothe the world, largely. They also spend the money to feed the home; so, if men are the great earners of money, women are the great spenders of money and they ought to be wisely educated for their work. More than that, we have done far worse by the women than by the men. (The women are taught everything

but economy. They are sent off to school where they are taught Rhetoric, French, Latin, Greek and Music. Those are all good things; but, suppose a boy got a cut on his arm; you could not bind it up with music; you could not sew it up with Latin, and there is no use to run a Greek root into it. The woman should have practical knowledge; practical knowledge is demanded. When a hungry man comes in, why set fried History for him? A good old-fashioned dish of meat, potatoes and hoe-cake is a great deal better than a dish of Latin or French. He has to have something to eat; how is he to get it?

I know a woman who ^{is} ~~was~~ the best educated woman I ever met. She never went to college, she never went to a seminary; she may have attended a high-school for a few weeks, I do not know. But she knows more about how to farm, how to go and select meat, how to select clothing for herself, her husband and children, than any woman I have ever known. Her family is well provided for; she is the best educated woman for actual work that I ever saw.

I have the greatest admiration for the great and good woman; we have never honored her enough; we can never do enough for her. But she should be the helpmeet to man; she should help him work out the

problems of life and help him carry them on as the world intends they should be carried on. The truth is all over the country to-day the boys are waiting so they can earn three or four or five thousand dollars to take care of some girl. I like the old plan: let them get married if they have only ten cents,- and then rustle. I do not admire the woman who is waiting for some man to make a fortune so he can support her.

I have talked about the men; I have talked about the women, who should be the helpmeet of men. Now as to the BOYS.

Just so a boy learns to farm one thing well, you need not be so very much troubled; he is sure to pick up the rest. That one thing is corn. Why? Because, corn is one of the best of all ~~varieties~~ cereals. The same land that will produce seventy bushels of wheat to the acre will produce eighty bushels of corn. Men have said to me, corn is not as good a food as wheat. Why not? Not so well balanced. That is its virtue. All the foods of the world are unbalanced. There are two great elements in corn: one repairs the frame and the other gives heat. If you put butter on your bread, you unbalance it; if you eat meat, potatoes, eggs, you are unbalanced. On the other hand, if you eat corn foods you are balanced! Therefore, it is a better food supply than wheat, it is a great deal easier made. I have been told that it is not good for people. If men grow larger than these mountaineers, who have been raised on hoe-cake and cold water, then I don't want to see them walking around the earth.

While in Texas one year, I was traveling on a branch road called "the Macaroni Road" and I was talking with a man who contended that people in warm climate were smaller than people who lived in the cold climate. So we decided to settle the question so I called up one whom I knew and I said to him: ~~this~~ Mr. True affirms that men in a warm climate are smaller than men in a cold climate, what do you think about it? He said: I was born and raised in Southwest Texas; I am six feet, weigh 225 pounds; my brother is 6 feet 4 inches

and weighs 300 pounds, my wife is nearly 6 feet and weighs 165 pounds; yes, we are small but we are spry.

Experiments do not always work; they all depend on circumstances. I want the world taught to raise corn; it is a great food. It must be done in the United States.

The question was how to teach these boys how to become attached to farming. We sent them the instructions. We gave notice to the people that these boys had entered into a corn contest. The business men became interested and they raised some very fine premiums. Every month we sent instructions to every boy. When you send instructions to a boy you don't want to use a small envelope; you want to use one that long (indicating). He is very much like the Chinaman; when we take our official introduction, going into the Orient, we take a small one for personal use; but for their use we take one about the size of a bed blanket. So is a boy. He gets interested, his name is in the paper; his father gets interested; his mother gets interested; all of his Aunts get interested; all the girls get interested; everybody gets enthusiastic about the boy. ~~It~~ A boy is the biggest thing on earth, excepting a girl. He is the whole show.

We had one thousand boys enlisted in this contest and nearly every one of them averaged over sixty bushels of corn to the acre in the contest where their fathers raised about sixteen. That is so much for the boy work.

We have made this plan: The boy who takes the prize in the County shall go up to the Governor of his State and the Governor shall deliver to the boy a State Diploma; then the boy who wins in the State contest goes to Washington and we give him a United States Diploma. This year four boys went to Washington; the Secretary of Agriculture made a talk and gave each a Diploma. They would not take one thousand dollars each for those diplomas.

These boys are to be honored. As Americans we have neglected honor. In England most of the officials get no salary; it is a question of honor. The men there seek the positions for honor. In

the United States there is no honor. It is cold cash!

We thought we would begin the boys on the question of honor; no cash but honor, and the boy who can take the prize in the County is the honor-boy. The State prize is higher and the United States prize is higher still. They wanted me to take the boys to Washington, have Congress adjourn for five minutes and pay honor to those boys. I could not do so, but another year I hope to do this; and in that event Congress would be doing more genuine business than the average business done by them.

The boy who won first prize in this State made four hundred dollars out of his acre. More than that; he got ten thousand dollars worth of energy stored up in him, and he got one hundred thousand dollars worth of honor stored up in him. He can carry that around; cannot lose it.

There are three methods for this: The first is by the demonstration method. Get the best seed, the best tools and take them right to his home. That opens the door of opportunity to all people; it sends enthusiasm to many a man who is discouraged, down-hearted, disappointed, on the ragged-edge of despair. It sends a real hope through the door we have opened and it makes a new man. Do you doubt it? Let me give you a single instance.

We have an agent, D. I. Swatty, in the State of Arkansas. A young man who was with us three years in the demonstration work. He had charge of several Counties, and he became so enthused he decided to take a farm of his own. He had offered him a farm of 1200 acres; forty cottages and about forty colored families residing there. It was owned by non-residents and things had gone so badly in 1908, the owners were almost willing to give it away to get it off of their hands. Only one hundred and five bales of cotton were made; from those families there were thirty-five criminal prosecutions, five murders and fifteen prosecutions in the higher Courts. This agent thought he knew how to handle men. He called them together and put

them to work under the Government of the United States, and told them they were a part of the United States. If you tell a negro that he is a part of the United States, it pleases him more than anything else. Sew a brass button on him, just anywhere, and he is a much greater man than he was before. He called these negroes together every few weeks; made them a little talk, told them they were doing well. After a while the boll weevil struck them. Nevertheless, on seven hundred acres of land he made three hundred bales in spite of the boll weevil. In 1908 the Company that owned it lost ten thousand dollars; in 1909 this young man who had taken the farm cleared eight thousand for his share. In 1908 it was criminal prosecutions and murders all the time. In 1909 there were no criminal prosecutions, no murders; only two complaints which were settled out of Court. That is an illustration that if you bring hope to men that are discouraged, you will make real men out of them. No matter how low a man is, there is a warm heart beating; and when humanity takes hold with a friendly hand, pulls that man up and says: 'Let's do better', there is no resisting. At the end of the year these forty negroes lined up and said: "We wants to continue under Uncle Sam another year; we has paid all our debts and has money in the bargain". That is how they felt. It is possible for us to take this doctrine of better things to the man on the farm to-day; give him hope, encourage him and tell him of better things.

Then, the women, too, should have all the improvements for doing their household duties rapidly; then work would be made lighter and home better. Then make the boy feel that the farm is his best friend; that the greatest chance for honor and money lies in the farm.

If we do these things we have won the battle for the human race. We have sent a new hope through man-kind. If we ever make a good, great people it is because the common man is aroused and started and made to do things.

A few great men do not make a good country, any more than one

hen can lay a barrel of eggs in twenty-four hours.

It is when all the men are aroused; when all the men are prosperous; when all the men are determined to have the highest conditions of civilization; the best of schools, the best of roads. All this it is that makes men happy. I should like to live to see one community in these United States come up to the high ideal,- where every man is a peer to the great Kings of the Old World. Our Courts would be wiped out because there would be no criminals; our doctors would have to go to farming because every man would know how to doctor himself; there would be no use for stores, for we would live at home. The women would know how to live so well that if they fried a piece of board, we would think it was good.

Dear friends, let us not forget all of this. Let us try to do it. And thus let the fame of South Carolina be heralded the world over for its advance in Agriculture. Every man upon its soil is equal to a United States Senator, any of you could be a Senator. But more than that, higher than that, you could become a Justice of the Peace; the highest of offices is to administer justice to your fellow-men."

Reported by Miss Grace Deal,
Greenville, S. C.

ADDRESS IN NEW YORK CITY, SATURDAY, JANUARY 21, 1911.

A short time since I received a request from the Office of the Secretary of Agriculture to fill an appointment which had been made by him before the Great Central Republican Club of New York City. This club does not devote itself entirely to politics but on Saturday afternoon of each week during the winter it has addresses from prominent men on the subject of agriculture and other subjects of especial interest to this city, in order that the members may be well informed on these topics.

At first I did not feel inclined to go, but the Secretary said that this club managed a great many affairs of the State and it would be helpful to the Department if I went. The list of speakers as published in their official program was as follows:

Prof. Seaman A. Knapp, S.C.D., LL.D., Chief Expert, Department Of Agriculture, (In the absence of Secretary Wilson through illness.)
W. C. Brown, President, New York Central Railroad Company.
Ralph Peters, President, Long Island Railroad (expected).
Prof. L. H. Bailey, of Cornell University, Chairman of Rural Life Commission, appointed by President Roosevelt.
Dr. Josia Strong, Sociologist and Author, (in opposition).
George T. Powell, Pres., Agricultural Experts Association.
Rev. John F. Carson, Chaplain.
J. J. Hill, President, Northern Pacific Railroad Company.

The addresses immediately followed the one o'clock noon-day lunch. I was requested by President F. P. Duryea to report to the headquarters, 54 West 40th St., where the club has magnificent apartments. At one o'clock about 500 members reported,

which filled the entire dining room in the tenth story. I was seated at the right hand of the President at the table and on my right was Prof. L. H. Bailey, of Cornell. The speakers were all seated at our table and spoke in the order named in the list given. Before speaking President Brown, of the New York Central, wrote that to his great regret he was obliged to be absent on account of the death of Mr. Paul Morton, President of the Equitable Insurance Company of New York; but in the letter he stated he particularly regretted being absent because he had read a great many articles from the pen of Dr. Knapp and he was anxious to hear him speak. President Hill was also detained for the same reason. All other speakers were present. I gave the opening and closing addresses.

The topic under discussion was the general cry now through the United States, "back to the farm". In discussing the subject, I stated that it was useless to appeal to the people to return to the farm as a mere matter of sentiment or loyalty to the place of birth, that the reason the people had gone to the cities was, in the main, because they saw better opportunities for the acquisition of wealth, to secure better social advantages and to obtain more of the comforts of life than in the country; and, therefore, the only reasonable foundation for saying "back to the farm" must arise from the possibility of making better conditions in the country for the objects stated, than now prevail in the cities. That is, there must be a general improvement in the environment of farm life, the schools,

the churches, the highways, the houses, and the conveniences in the country must be equal or superior in every respect to those in the cities. But, above all, it must be proven that the lands will yield a more remunerative compensation for toil than employment in the cities; so far as the average common man is concerned. Then, I showed briefly the numerous losses from unscientific methods in the rural districts and the remedy that could be applied which would in a short time readjust the country.

At the close of my opening address, the president moved a vote of thanks to Secretary Wilson for sending me there, and the members were full of congratulations. It was claimed it was the most interesting session they had ever had. The addresses of Prof. Bailey, Dr. Strong and Mr. Powell were all interesting and able.

At the close of the session I was congratulated by nearly all of the members and invitations were extended to speak at Columbia University, the Presbyterian General Assembly, Cornell University, etc., in an almost unlimited number. Our session closed at 5:00 o'clock and I took the train at 6:00 P.M. for Washington, arriving at 11:30 at night; and it takes about an hour to ride home from the station.

*Dr. Knapp -
Personal Copy.*

VIRGINIA.

THE FARMERS AND THE COMMON-WEALTH.

--oOo--

Virginians have inherited two things of superlative value,- the racial blood and the domain.

The people are the most valuable asset of any country. Virginians are descended from the best race of men that has ever peopled the globe, courageous, liberty-loving, energetic and intelligent. Next to race in value stands the country. Virginia is a marvelous domain. Its Coastal region is penetrated and dominated by an immense inland sea full of harbors and rivers. On the west of the domain it has to its advantage a range of mountains which protects it moisture and regulates its temperature. East of this, occupying all of Central Virginia, is the Piedmont shelf or plain, and on the coast a great variety of loam soils. The rivers penetrate to the heart of the State. But above all, the proximity of Virginia to the great cities of the Atlantic Coast and to the crowded population of Europe is an advantage not easily overestimated. Further, Virginia lies in the latitude of the great empires of the world,- of Persia, and Greece and Italy. These advantages, however, avail little unless properly used. A wrong policy may vitiate and even thwart the best natural conditions. This we find to be true in that wonderful oriental region, the Yangsee Valley of China, the great

SOUTHERN RAILWAY COMPANY

OFFICE OF THE LAND AND INDUSTRIAL AGENT

1320 PENNSYLVANIA AVENUE, N. W.

M. V. RICHARDS,
Land and Industrial Agent

H. E. WAERNICKE,
Assistant Land and Industrial Agent

IN YOUR REPLY PLEASE QUOTE OUR FILE NO.

CABLE ADDRESS

"MILRICH"

WASHINGTON

WASHINGTON, D. C.

February 21, 1910.

PERSONAL:

Dr. S. A. Knapp,

U. S. Department of Agriculture,
City.

My dear Doctor:-

Sorry that I will be unable to see you, as I leave for the South this morning. I enclose herewith copy of stenographic report of your speech at Anniston, with bill for \$24.87 from the stenographer, Mr. H. L. Smith. I have taken care of the other bills in my expense account, and it occurred to me that probably you could handle this amount in yours. You will appreciate we are not in position to criticise the amount of the bill.

Enclosed herewith is copy of letter I am sending Mr.

Smith.

Yours very truly,


Land and Industrial Agent.

bs

Copy

February 21, 1910.

Mr. H. L. Smith,
Talladega, Ala.

Dear Sir:-

This will acknowledge your bill of the 12th inst., \$24.87, for reporting speech of Dr. S. A. Knapp delivered at Anniston, Ala. This matter will have attention, and we will see that the amount is sent you.

Yours very truly,

bs

Land and Industrial Agent.

City Court of Talladega

Office of Reporter

Talladega, Ala. February 12, 1910.

Southern Railway Co.,
Land & Industrial Dept.,
Washington, D. C.,

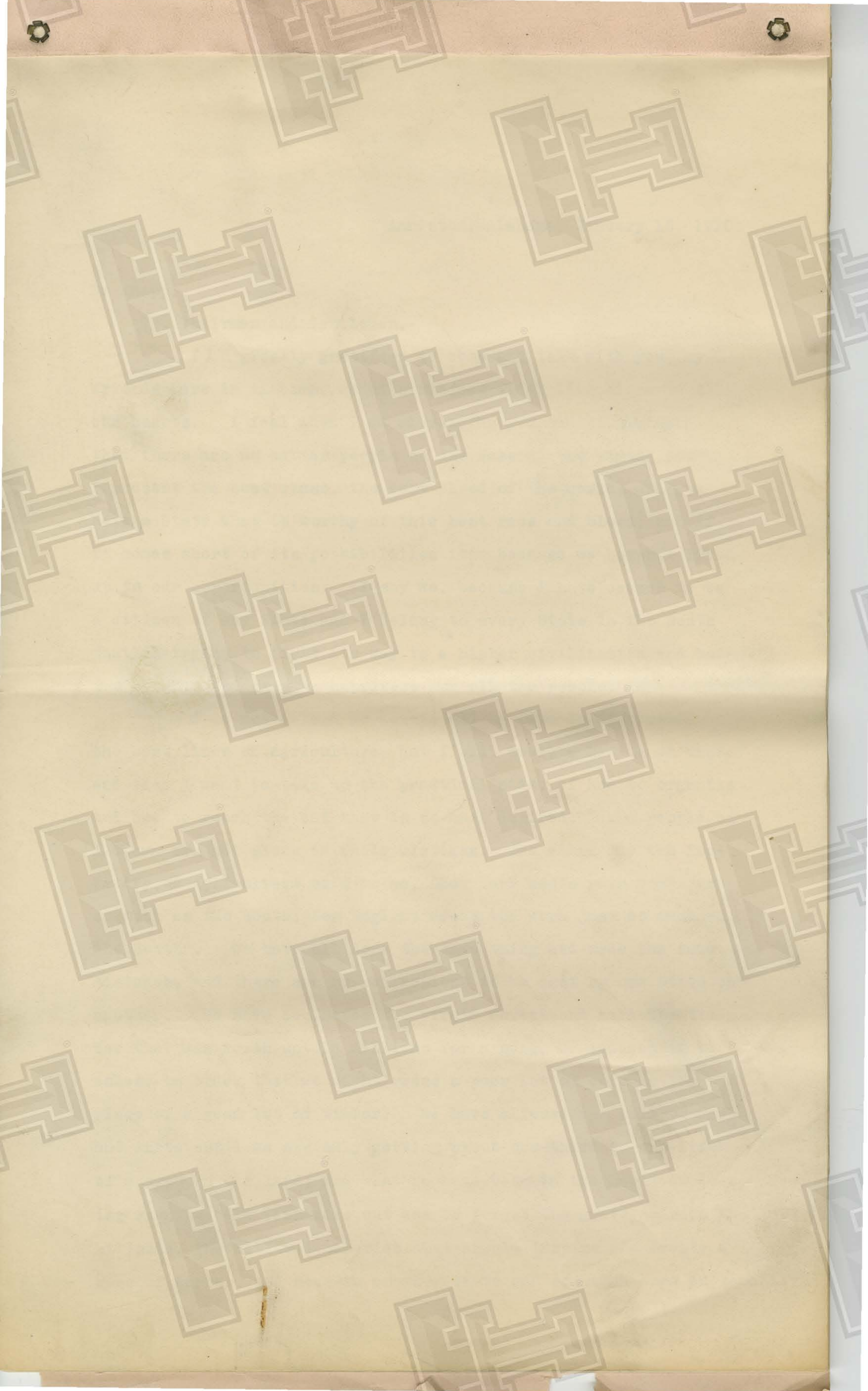
To

H. L. Smith,-----Dr.

1910.

Jan. 27. To five (5) copies of stenographic report of speech
of Dr. S. A. Knapp, of U. S. Department of Agriculture,
delivered at Anniston, Ala.,----- \$24.87

(Two copies furnished to Mr. M. V. Richards; three
copies to Mr. H. M. Ayers, News Editor of Anniston
Evening Star).



Anniston, Alabama, January 15, 1910.

Dr Knapp:

Mr. Chairman and Gentlemen,-

I am greatly gratified to come and talk with you, my friends here in Alabama, about a subject which lies close to all our hearts. I feel when I am addressing you men of Alabama, that there are no better people on the face of the earth; you represent the best class, the best blood of the world; and you have a State that is worthy of this best race and blood; and if it comes short of its possibilities it's because we haven't lived up to our opportunities. I say we, because I have ceased to be a citizen of any State and I belong to every State in the South that is trying to fight its way to a higher civilization and better results and greater happiness for all the people.

I do not intend to devote all my time to discussing the best lines of agriculture, but I will dwell a little on that, and then I want to take up the practical side, of how to organize and how to reach the end that is so much desired. The people of Alabama are not alone in their mistakes. The other day the Secretary of Agriculture said to me, "New York needs your work just as much as the South; New England needs the work just as much as the South". We have all done the same thing and made the same mistakes, and there are no reflections to be cast by one State on another. We have decimated the virgin forest and sold the timber that was worth untold millions for a song, or reduced it to ashes, in order that we might raise a poor lot of corn in the place of a good lot of timber. We have allowed the soil to wash and waste until we are only getting about one-third to one-fifth of a crop on our land; and what we have been in the habit of doing when the old farm wore out was to forget the graveyards on the hillside, the hallowed memories that should inspire and create a race of heroes, and move to another State and commence anew on some

more virgin soil; whereas it would have been better for us and for our friends to have heroically gone to work making soil, because soils are not created, they are made - as a rule. And, as I stated yesterday, if a man has a poor soil, it is not the soil that is to blame, it is the poor man on top of it, and instead of adding the fertility to the soil the man requires the fertility to be added to him, first, or you will never get a fertile soil under him. We can make all these soils profitable. We have the climate - and there is about four-fifths in the climate; we have the possibilities of making the soil deep and fertile, if we will, and it doesn't require a great deal of studying to do it. The problem then before us is to make our land productive, and so much depends upon the man that I have said, we take a man of heroic mold and place him on a rock of granite and let him hammer out a soil, and enrich it with his blood, and that of his kindred, and with his tears, and he will make a better soil and get better results than a man of unheroic mold in the valley of the Nile or in the Mississippi Delta. It depends so much on the man. Now fortunately you have the men here of heroic mold, but some way it is so easy to get sleepy and to get easy. You can give us too good a country, and make life so easy that we all become careless. We have come to a period which is an epoch, and while on the turning point we will either go forward a great distance or we will go backward into poverty. As we have been going, we have been reducing the fertility of the soil and each generation has passed on to the succeeding generation a property reduced in producing power; and if that condition continues we are going to have a race, a poverty stricken race in this country, just as they have in the great valley of the Ganges or on the plains of Estramadura in Spain, which was once the granary of Rome. It is just as sure as two and two are four, and we might as well awaken to the conditions that surround us as not. We must awaken and arouse our people to change conditions or else the future is certain, a future of poverty, so far as the condition of the men that reside upon the farm is concerned. Another reason: We have depended upon cotton, one of the great cash crops of the world, and justly so. It rarely falls to the lot of

any people to control one of the two great necessities of mankind, clothing and food. We produce seventy per cent. (70%) of the material that clothes the world. That is endangered by the invasion of the weevil. It has come within four miles of the State of Alabama, in fact it is getting ready to invade you next year. It may not come - I hope it will not, but under ordinary conditions it will make the invasion. I heard them talking about it and they are preparing to make an invasion. Now I want the people ready for the defense. There is no trouble about making cotton under boll weevil conditions if we are only prepared for it and know how, and you will prosper perhaps a little more under boll weevil conditions than you did before the invasion, because what you do make you will make more economically; you will probably make more cotton per acre, you will have less acres, and do your work better. But I am not designing to discuss cotton here, because you understand cotton, although you are not producing as much as you ought. Here is the general outline that I want to call your attention to: Only a small part of your State - I do not recall the exact proportion, but generally in these Southern States about one-sixth of the land - is under cultivation, and that one-sixth must pay all the taxes, support the people, pay the expenditures for the supplies that you have, and make you comfortable in your old age. How about putting the other five-sixths to work? An acre lying idle, producing nothing of value for a State, is just as bad for the community as a loafer who refuses to work, and you put him in the chain-gang. I wish you could put all these idle acres in the chain-gang and make them work somehow, (Applause) and you begin to realize something. Well, how can we make them work? That is one of the points I want to mention. We passed along through a country this morning with its hills. They are too steep, most of them, to be profitably worked, with the present population that you have. The time may come when it may be necessary to cultivate them. Those hills, for the best interests of the soil and your best interests should be made to work in producing valuable timber or in grass, both of which will conserve the soil and both of which are exceedingly profitable. We have not realized in the South the great

value of grass farming. Take an acre of alfalfa - and you have a good many lands that are excellent for alfalfa; most any good acre in this State, if properly prepared and seeded, will produce five (5) tons of alfalfa in a season. Five tons of alfalfa make 10,000 pounds of food matter. We will allow that there is a little more woody fibre than there is in corn, but there will be somewhere in the vicinity of 8,000 pounds of material come from that acre that would be of nutritive value. Now that is more than twice as much as you can make out of the same acre, under the same conditions, in corn, and it is ten times as much as you average to get out in corn. It is produced with a great deal less labor, and furthermore it leaves the soil in better condition than it was before the alfalfa was planted, and therefore it is a renovating crop to the soil and a renovating crop to the human pocket book. It does double work. That plant which produces such a great body of food and is so easily cultivated is certainly a valuable plant. Just so you may take up cow peas, and peanuts and corn. Let's talk a little more about corn. I regard corn as the basis, in a sense, of certain lines of prosperity. If we have plenty of corn in the crib we will generally try to have some pasture, because we want some cattle or hogs to feed that corn. So it is the beginning or the basis of profitable stock raising. The great advantage of corn is its wide habitat. You can grow it profitably in nearly every State in the Union, and you can grow so much more food to the acre than you can in oats. An acre that will produce fifty (50) bushels of oats will produce eighty (80) bushels of corn, if properly tilled. It is so easy also to learn how to make corn. In fact the mistakes and the failures in all our crop propositions are so easy and so simple that I wonder everybody doesn't know how to make a crop. Just three things: A perfect seed bed - one that is deep enough and has humus or decayed vegetation in it enough to carry moisture, so that the plant can be fed all the time and does not suffer from drouths, is deep enough so that a heavy rain-fall will go down below most of the feeding roots and not drown them, is cultivated so that the air gets at it; is planted with the best seed - that is the second proposition - the best seed bed, the best seed, and

intensive and shallow cultivation. If you would learn those three things it would be worth Fifty Million Dollars (\$50,000,000) a year to the State of Alabama. I would nail, I would print them in letters of blood, if necessary, and nail them on every door-post in this whole State. Why should men fight and bleed and struggle for life, and women wail and shed their tears, because of insufficient earnings when three things will place you on the highroad of prosperity? (Applause) You do not have to go to an agricultural college to learn them. I am not saying against college education - it is a grand thing - but those three things are so simple, pure mechanical things, that the veriest negro, if he has half sense, can learn them in four minutes. That is all that is necessary. We have had some mistaken policies in the world, and those policies have cost this State more than Two Billions of money already. What are you going to do about it? I am not here to say you are wrong in some things and you have made some mistakes, my good brother, and to say some honeyed words to you; I am simply saying that we have all made these great errors. What are you going to do about it? Are you going right on next year and do the same thing? Are you going to hand that same mistake as a precious legacy belonging to the race and the family, down to your children and let them inherit poverty? Or are we going to change? Suppose we change. We simply deepen the soil, so that the roots can have feeding ground and a better home and have plenty of moisture, for the roots can't eat unless the water is there to make their gruel; they can only take their food in the gruel form, and there must be moisture there, and there must not be too much moisture. Therefore, the soil must be pithy enough so that it can pass below the roots and come up when you want it. That is a necessity of the best crop conditions, and it doesn't cost much to acquire this deeper soil. Of course, I am not going to stop here and tell you how, in an audience like this; I am simply touching the high points and the necessities and appealing to you, and if you want to know how send to your State Department of Agriculture, or send to your Agricultural College, and if they haven't all of it send to me at Washington. We have about 350 bulletins that are published free, and you are entitled to the whole set, every

one of you. How many are sending for them? You can have them. We are glad to send them out. Just let us have your names. If you forget my name just write Secretary Wilson, Department of Agriculture, and he will send that letter over to me and I will see that you get what you want. You are entitled to them. Now we have been going along to show the carelessness, and I am dwelling a little on these points to show the remedy. The carelessness of men about the value of a seed. What is a seed? First, there is a little germ there, and if you place it under a microscope, it is a miniature plant. This germ in the cotton seed is a little cotton plant. Now what is the rest of the seed? It is some food that nature has put there to nourish that little plant till it can get strength enough to put its roots out and catch hold of the world. That is what nature has done everywhere. In the mammals there is the mother's milk to nourish the little one until it can take hold of the world. In the seed it is some nourishment there to take hold, to help the little plant, until it can get hold of the world. Now the finer you pulverize that soil and the better it is and the more food there is in it, the better that plant will do when it gets hold of the world. And what is fertilizer? Why, it is a little nourishing food that is put there to help the young plant to rustle for itself, and it wants to be a plant, when the plant is young you are to help it get hold, for when all its roots are spread out it will help itself. So much for the seed. Yet we go right along. See what damaging influences may come to that seed. The seed is a most wonderful thing. In that is written the history of all the generations that have gone before. If you didn't half cultivate your plant last year the seed that comes from that plant and is planted this next spring will tell that story in a depreciated plant; or if you have half selected, the story is all told in the seed. It inherits its generations and its surroundings. A plant if surrounded by a lot of poor plants, will transmit, will cross-breed and transmit lower qualities to the generations that will be produced from that seed. Just as ever so good a boy, put in an environment of crime, with all his associates criminals, is unavoidably made worse and his character ~~lowered and~~ contaminated and lowered by that association,

and a plant does the same thing; and therefore it is not only the individual plant but all the plants around it that must be looked to and must be made of high quality if you want to get the best results. So much for the wonderful power of a seed. And when you come to cotton we have got to make a plant that will produce, - throw all its forces into the lower limbs when the boll weevil comes; so that you get your crop on the lower limbs, because sooner or later the boll weevil will come and take top crop. They are making no top crops of any amount in the sections where they have the weevil, consequently we must get ready, and have the right kind of cotton. But I am drifting.

Now cultivation. Year after year the negro will go along, and the white man too, and use a plow. What has nature done? It has thrown these little fibrous roots up, feeding, to get its start, clinging around little particles. If you will look at them through a microscope, there is a little mouth on the end of each one of these little hairs. They will come up within two inches of the surface - and sometimes closer than that - and we run a plow through and cut off the great body of mouths, the feeding apparatus of that plant. You might as well say a boy would grow better if you would saw him off just below his mouth. What we want to do is not to disturb the feeding apparatus of the plant; cultivate shallow. Now there is another reason, the soil is an important part. It is what we call porosity; it is capillary attraction, and the moisture from below, loaded with little supplies of food, comes up, and if you did not disturb it, if it is solid ground, a great many of those would pass off and evaporate and you would lose them; but we run a shallow cultivator over the surface and we break these pores, and while the top is dry right down under it the moisture stops, because there is no chance to pass off to the surface, the air is a non-conductor, and we have made a very loose soil right on top. It comes up and it stops right near the roots and the plant can get it in the best way. And So by every cultivation you are adding to the food of the plant an enormous amount.

Now there you have got your three things. That perfect

seed bed. If it is sand, the trouble is that it won't carry moisture enough in it, that it lacks some material. You add decayed vegetation. Decayed vegetation will carry almost double its weight in water while sand will only carry twenty-five per cent. (25%) of its weight. That is, decayed vegetation will carry eight times as much water as sand, consequently you add to that sand decayed vegetation and you have it. Clay carries enough moisture but it is too compact, and you make it more porous, hence it is just what nature does, to renovate both kinds of soil, the addition of humus. Nature ought to have settled that; it does settle it, because it drops the leaves that are full of fertility on the soil and the forests become rich, or on the great prairies the decay of grass year after year made them rich, and the decay of roots also. So that you need but just a few things. Now the point has been how to get these three things to the people, so that they will adopt them. For the lack of better methods we devised this Farmers' Co-operative Demonstration work, for this reason: A man will doubt sometimes what he sees and frequently doubts what he hears - and I rather think he ought to - if we would only believe about one-tenth of what we hear, it would be a good thing for us - but a man cannot doubt what he does himself; he is bound to believe in what he does; and there is the misfortune, if he does a bad thing he believes in it and thinks he is the best farmer in the world. Poor old uncle, he never got more than 15 bushels of corn, but he will get on to a dry goods box and take out a jack knife that his great-grandfather willed to him - because he is too poor to buy one - and he will begin to whittle a stick or a part of the dry goods box, and he will tell you how to make corn, - and you would think that he made 175 bushels to the acre, if he didn't tell you the bushels, to hear him tell about it himself, and he never made over 15 bushels in the world. Yet he believes in it himself; if he didn't maybe there is half of us that would commit suicide. It is a good thing to be hopeful and cheerful. Now some way we must arouse the man, to startle his belief just a little in himself and see things. We have done so in many ways. In one Congressional District in South Carolina we couldn't get over the ground fast enough with our demonstration work, and the

Congressman said, "Can't you devise some way?" So we devised this way to help about corn. We called, I think, some eight or ten meetings in the District, and said to the farmers - wrote them personal letters - "Come to (such a point) and bring the corn that you expect to plant next year; make your best selections and bring them there; we are going to have a table and sort them out, and we will have some corn judges to give you the good points on your corn or the bad points; so come out". Well, at one or two places we had as high as two or three hundred farmers, and I think they averaged over a hundred at all the places. They brought their corn and each man walked erect and thought his fifty ears of corn was going to take the first prize - although no prizes were offered - but he imagined that he had been raising the best corn there was in the whole country. They laid that corn out on a pile and began to look around. Somehow or other in a short time a good many of those piles disappeared - and the hogs alone were reducing them, they had to have some corn- the man was so disappointed when he came to line his corn up with his neighbors, at the looks of it, that when the judges came around he just took it away. So corn kept disappearing until by voluntary selection over ninety per cent. (90%) of that corn was thrown to the hogs and about ten survived. The Ninety per cent. bought a better corn and said that next year they would come back and make another trial. So that publicity and comparison is one of the great educating forces that we have in this country, and it will do a great deal if you can arouse a man and get him to believe he is not the best farmer in the world, he will begin to do something; but so long as he is perfectly satisfied and thinks he knows everything you can't do much with him. Time and again when we sent our men into the field in Texas, when we first started in that State, they would say, - although every man was a Texan and a good cotton grower that we used as an Agent, because we went on the philosophy not to take men from other States if possible - he would say, thinking that they came from Washington, "I don't want any men from Washington to teach me about making cotton; I can make better cotton than they know how to make; I was born in a cotton patch and I grew up at the Northeast corner of a cotton stalk, and I know something about cotton". Well, they

would make perhaps a quarter of a bale and one-third of a bale, and they thought they were getting all the cotton there was contained in that soil. We just made a little example. At one station where it was sandy land, two or three feet deep, - station called Bremont, we will call it, - they were making on an average of one-eighth of an acre a bale of cotton per acre; we put on demonstration close to the depot and it produced a bale and three-quarters. Just by this little three. You have heard of the three-card monte. Our plan is the application of the three-card monte business to farming, it takes the trick, and it takes it every time. That is all there is of it. We wanted something that would do the trick in agriculture. I dropped in there and the hotel keeper didn't happen to know me. He said, "You are a stranger here". "Oh", I said, "a little" - had a farm only six miles away, but he didn't know it. "Well, sir", he says, "we have got the greatest thing here you have ever seen in all your life. See this cotton patch the Government has put on demonstration in here; I have never seen anything to beat it in all my life; why, sir, the cotton stands about five feet high, when most of our cotton is only about eighteen inches, and it is loaded with bolls". (They hadn't picked it at that time and of course imagination went ahead of the result) He says, "Sir, we all believe it will have two bales and a half to the acre". All carried away with it, and they didn't let a man come to that station but they took him by the collar and marched him up to that little cotton patch. That is the way they got aroused. Couldn't have done anything - I might have sent a carload of books, Mr. Richards might have taken a train-load of exhibits along there, and he might have taken anything to the people in the world, we couldn't have aroused them so much as to let them see that one acre producing more cotton and that it didn't cost very much more. It was just a different way of preparing the soil, different seed and intensive cultivation. The fertilizer was very little more than the rest were giving to their own cotton. Now, that little three-card monte business applied to agriculture will take the trick all over the country, and we ought to learn it. It is not a shell game when it is in the hands of a farmer, but it is the winning hand and you can always bet and win your bet every time. It is a success. But let's talk a little more about

things. The great American crop is corn, because it produces so much and on most any land. Now what is the trouble with corn. Corn needs a seed-bed at least a foot deep, to do its best ought to be a little deeper than that. It sends its roots down very deeply into the soil if it has a chance. We make our soil just as deep as we plow; below that it is canned goods, and there is very little food or fertilizer down there, but just as deep as we plow we can make a soil. You have got to use caution. I am not going to dwell on that. I am not advising any man to go in and rip up his land a foot deep all at once - unless he does it in the proper way - to turn up the sub-soil to the surface; the sub-soil is just as fertile in mineral matter as the surface, and nature has manufactured it into food. Therefore, we must be a little slow about it unless we use a disc plow; but granted a good soil, a foot deep at least, filled with humus, and you can raise here in this State one hundred (100) bushels of corn to the acre on most of your acres. You have a great deal better corn country than they have in the northwest, down here, because you have the atmosphere - and four-fifths at least of the corn plant is an atmospheric growth; notice the soil growth is very little, that one fifth you must prepare it right; and when the growth is from the atmosphere you have the conditions to make that growth, because it depends on that even temperature of about 85 to 90 degrees, so that corn will do its best; and you have more days in the year, and more hours in the day, - nearly five times in all, it amounts to, more than in the great corn belt - yet you are buying their corn and bringing it down here. And you can raise a hog at one-half the cost that they can raise it, and they may do their best, and yet you are buying their hogs. The hog to be eaten is a hog that walks around and makes a muscle; it is what we call a bacon hog, a streak of fat and a streak of lean, and that is the kind of hog you can produce, that picks its own food in the field; and have a rotation of crops, so that it is always fattening. Those great hogs that weigh four or five hundred pounds and sat still all the latter part of their lives, simply eating, and are a mass of fat, they are no more fit for the human stomach than a man that has been eating three times as much as he ought to and been sitting in a chair for four or five years with-

out exercise is fit to go out and do a day's labor on the street. He can't do it. And furthermore that condition is full of disease for the hog and for the man that swallows the hog. The pork to be eaten is Southern pork. The problem to be wrought out is all yours. Now furthermore I want to dwell right there on the point that there is no kind of farming can be made profitable in a long run for the masses - I am not saying that here and there a man cannot prosper - unless he produces the food supplies for himself and his animals. It can't be done. (Applause) Why, for thousands of years they have tried it all over the world. It has been a failure. What's the use of stumbling over it any more? Just accept it as a proposition. One man may say, "Well, I made money by putting my time into cotton and buying with cotton". Well, cotton is pretty uncertain. You may get 15 cents a ~~pound~~ pound last week and today you wake up with an empty pocket book. It drops. Now the point is simply this, that you are paying from three hundred to five hundred per cent. more for the things that you buy than you can produce them for. I saw a gentleman take up a can of sweet potatoes, held it up and he said: "How much is the sweet potato that is in that can worth"? An expert there said, "A farmer would get about one cent for the amount of sweet potatoes in that can". All right; the sweet potato is worth one cent. This can of sweet potato sells for 15 cents, the price is marked on it. Now where did the 14 cents come from? How did that arise? Why, it was tin, it was labor in canning, it was printer's ink, the cost of the label around it, it was profits, it was transportation, and a whole lot of things, and you are paying fifteen times as much as it cost you to produce it; and then you are going to town and hauling it home, and raising cotton to pay fifteen times as much as it would cost you to raise it at home. And it is so with a good many other things. Now another thing. I don't know how it is in this section, but in the colored sections where I am acquainted the average colored man has the rheumatism that is about 45 years old. Why? Because he eats corn and pork, and that is not a balanced ration. There is not enough food supply to build up the system. The system must have a balanced ration. We are just like a boiler. You must have material to give heat to the system

and you must occasionally have some material to repair the flues or repair the shell. Now we have to have a certain amount of material to repair the muscles and the tissues and the framework of the human system, but the main part of our food must give us heat, and energy, that is the working force. Corn has a plenty of heat and energy but it is a little short in muscle material, and just so with anything that has carbon. Now the worst thing in the world to eat with corn bread is fat meat. It simply adds, increases, the irregularity of the method. It makes it still more unbalanced. You ought to have had a few beans to go with it. Then furthermore every animal needs some vegetable food, which is a remedy. When I was keeping a dairy on my farm if a cow got the rheumatism through the winter I turned her out on grass, - didn't give her any medicine, the grass cured her, - or a horse got the rheumatism by heavy corn feeding, turned him out on grass. The Bible says they did the same with men, they turned Nebuchednezer out to grass you remember. (Applause) Now, Gentlemen, if any of you have got the rheumatism, just go to grass. Now how can you go to grass? Make a good carbon winter and summer and eat green vegetable food, and it will help regulate the stomach. These foods carry in them medicines as well as stimulants and as nutritive material, and that is what we need, we all need a good vegetable carbon summer and winter, for economy and for health.

Now why should you mortgage your farms in order to raise money to grease a negro's throat, or anybody else's throat? Why not make him produce his own living and get along without advances? And what you have is a clear gain? This seems to be the philosophy that we must inculcate all over. The fact is that the agricultural South has an opportunity of being the richest country on the face of the earth. (Applause) It is from wrong economic methods. First, errors in handling our crop; errors in economic methods - because when we have made money out of our crop then we are the most liberal people in the world; we buy everything in sight, and when we have gotten through we haven't any money left; and we go right on and borrow some more money to make another crop, in order to make other people rich in other States. You are liberal people, great hearted people, but

the trouble with you is that your heart is so big it is out-doors. Cover it in, bring it inside of you and cover it up, and keep it warm; you need a little of the good things at home. Buy less and sell more. (Applause) Go to town with a full wagon and come back with an empty one. Why, when I was a boy we never bought any groceries, and now everybody buys groceries. The little town in Louisiana that I call home - and I feel it an honor to call it my home, I have lived there twenty-five years - was boasting to me last fall that they had just ordered a hundred carloads of canned goods from Baltimore. Well, now, I tried to figure up how many tea cups full of sweat from every man that worked it would require to pay for that one hundred carloads of canned goods from Baltimore, and it took a lot of them. Just think of it. And all those things were produced right there, because it is Nature's place to produce things. All the vegetables could be produced there; it is a better country for them than Baltimore; and the oysters are produced in abundance there, and the fish, and everything. But there is something fine in ordering them from Baltimore. That is our way. Let's quit. I am tired. How about you? If any of you have an auger, bore an auger hole when you get home, and take the Bible in your right hand and swear over that auger hole, until that auger hole grows up you won't buy any more of that stuff,- you will raise it. (Loud applause) It will do you good, and we will become the richest people in the world. We need all this money. Well, what will we do with the money, some fellow said. Well, I will tell you. Half of these towns are begging northern capital to come down here. I say that the farmers should furnish the capital for all these manufacturing interests; the farmers should own all the banks, and all the railroads, and be, as they say in our country, "the whole push". And you can do it if you will change some of your economic methods.

Now another thing that I wish to call your attention to - for I do not want to talk too long along these lines - and that is this: Any country that depends upon a hoed crop is not as rich as it ought to be, because it can't put all the acres to producing. One of the most profitable crops in the world is the pasture and the hay

crop and the good stock. Europe wants the best beef. Europe and our Atlantic seaboard cities want the best butter, and why can't you produce here in this section, particularly, peculiarly adapted to it, the best beef and the best butter. Some people don't know what the best beef is. If you will look at the best beef through a microscope you will see the muscle is all interlarded with globules of fat. When you shut your teeth down on it, it is juicy and mellow, and has a high flavor, and commands a big price. It tastes good in the mouth and the money tastes better in your pocket. Now there is another thing that we neglect. Let animals come up as they please and we endeavor to fatten them, the fat is all on the outside, it is not interlarded fat. The profit lies in growing the young animal. The young animal will put on more than twice as much flesh from a pound of food as an old animal. Where they are feeding for export beef they expect to make their calves weigh one thousand pounds at a year old. Now feed them just as well as they can and they will eat about twice as much the second year, they can't put on over four hundred pounds the next year. So that they make the great money the first year. Now if they feed another year the animal will still eat more, and if they put on two hundred and fifty or three hundred pounds they have done well. Consequently the growth of the first year is a thousand pounds, and of the third year two hundred and fifty or three hundred pounds, and the third year the animal ate from two to three times as many pounds as it did the first year. Now there is the profit. Yet we are ignoring the whole proposition. We are forgetting how to make the best beef. Now another thing: Not only is that animal which is brought to maturity early, not only has it made you more profit, but it is a much higher quality of meat and sells for a much higher price per pound than one that is grown slowly. There is the same difference, my friends, between an animal grown slowly and the product as there is between a vegetable. You may take a beet and grow it slowly and it is tough and pithy. You take an animal and let it grow slowly and it is tough and stringy. When I first went to Louisiana and Texas and had to be out on the prairies they gave me beef that I called fried raw hide. It was cut out of those

animals that were born on the run and had chased their shadows all their lives until their meat was as hard as steel, and then they would cut it out in blocks and hold it up in the air, and the only way I could eat it was to chop a chunk off with a hatchet and put it in one side of my jaw, when I would have to be riding all day, and by night a little part of it would have soaked off. (Applause) We want beef that we can chew and we can incorporate into our system and enjoy, and that will nourish us. Now so I might go on with other things. The profitable lands of husbandry, so as to employ all your hillsides, covered with grass, and you bring into the best effect your soils that can produce enormous amounts of forage plants, on account of your temperature, your atmosphere, your climatic conditions. The kind of farming that you want to make the most profit out of is stock farming. I don't mean you must all go to stock farming; perhaps I don't mean that you should raise any less cotton than you do now, but I would raise more cotton per acre and less acres, and then I would devote the remainder to producing corn, in getting one hundred bushels to the acre. Then I would take those lands doing nothing, only laughing at you and you paying taxes on them, robbing you every day and all you are producing on them is brush and weeds - weeds you need perhaps in order to make you work, because they will seed all your land and you will have to work a little harder to get rid of the weeds during the year. Now if you will put all those good lands to producing good pasture, and turn it into milk and butter, and into cheese, and into good beef, and into poultry, and into hogs, for the supply of your home markets, and when you have supplied your home markets, to ship abroad, ship to the cities of our Atlantic coast or to Europe, you will find that you are a great deal more prosperous. Now one thing I know about the most prosperous: Take the dairy region, take it even in the mountain states. Their lands are worth, we will say One Hundred Dollars (\$100.00) an acre; where they are growing corn and wheat and other crops and have no great dairy interests the same kind of land in the same State is worth One Hundred and Fifty Dollars (\$150.00) an acre where they are engaged in the dairy business. That shows the effect on land. And I notice that their homes are a great deal

more comfortable. Now I tried to find out why this is so. It is because a cow is one of the best manufacturing establishments - a good cow - on the face of the earth, to produce money. Of course there is a great number of cows that do not make a great deal of money. It takes just so much food to run the machinery, and there are plenty of cows that may not give much milk, they only eat and digest enough to run the machinery. Now a part of that is due to the fact that your food is not of a high enough flavor, because a cow, or a pig, or a horse eats because it tastes good, just the same as you and I do. They will give us all we want to eat and then bring on the desert and because it tastes good we eat some more, and then if they will pass the candy we will eat some more. Now I have tried the same thing on pigs and cattle. They will go into good pasture and hay and will eat all they want, but take them to pasture or hay a great deal better and they will eat almost twice as much more. It is the little more you get the money out of. For example, the German experiment stations have proven that it requires about nineteen pounds of clover hay to keep an animal, steer or cow, weighing 900 pounds. A cow eating that would give no milk; unless she reduces her flesh it is just enough to run the machinery and keep her warm. There is no profit in the cow that could eat and digest just nineteen pounds. If she ate and digested twenty pounds, where is your profit? One pound of profit. If she ate and digested twenty-one pounds - or another cow ate and digested twenty-one pounds - that cow is worth twice as much to you as the cow that ate and digested twenty pounds. And so just in proportion as you can get an animal to eat and digest more you can make the greater profit, providing the food is properly balanced and they are not overfed. Therefore, it is of the highest importance that all your food should be of the highest character, and that high character, so far as hay is concerned, is to cut it at the right time and cure it so that all the flavoring material is not evaporated by the force of the sun; cover cure, and they will eat more and become more profitable. Now the average cow doesn't give a great amount of milk. The average of all the cows of this State probably would not be equal to one thousand quarts in a year. The average of the United States, even the dairy districts included, is only 1695 quarts in a year. Instead of

that a first class cow should give 6,000 quarts of milk in a year, or 12,000 pounds. I know this by actual test. And there are cows that will give 8,000 quarts of milk. 8,000 quarts of milk is equal in nutritive value to 6,000 pounds of beef steak; if you kill the cow you would only get about 420 pounds of lean meat, and that would end the proposition. If you milk the cow you get 6,000 pounds of the best beef steak and she is ready for business the next year. It shows how much more there is in getting milk than in producing beef when you come to intense civilization. A large population - they always resort to milk and to eggs, and your hills and your climate are peculiarly adapted, and therefore I commend it to you as one of the most profitable lines of husbandry into which you can enter. But you can't jump into it at once, - you can't buy these best cows. A man is insane that will sell his best cow, unless his family is sick or something else, he won't part with it. You have got to produce her. Hence the sooner you begin to produce this best cow and this best hen and produce this best beef, the better you are off. And just so I would say the best horses.

Now that perhaps covers some of the remarks, some of the thought. In substance it is this - without it is to produce less acres of cotton - make your work more intensive and produce three times as much per acre. Cultivate less acres. If you can get more labor, take those acres that are turned out and produce large crops of corn and fodder, and then set these idle lands of the hillside to doing something in the way of producing grass, get them into better kinds of grass. And so make every acre a productive acre, and I guarantee to you, you will see a condition of prosperity that you have never dreamed of. People will rejoice in living in the country because it will be prosperous. Now how shall we bring this about? I do not know any other way than to organize. We have our methods. I will not go into detail, you know very nearly what they are. Our co-operative demonstration work, by proving to each man on the farm, by cultivating a single acre, how he can accomplish the rest. That is doing some good, but, my friends, it is not working fast enough. We need help on every hand, and we want to co-operate with your commissioner of agriculture, with your agricultural colleges,

with all your county organizations, with your merchants, and with your bankers and with your farmers,- everybody must take hold and try to help pull. It is all because there are some men "awful sot in their ways", as the man says, and they have simply got to be taken by the collar and jerked out, and unfortunately they never had money enough to buy a collar. How are you going to get hold of them? That is the trouble with them. I propose to get a stick of dynamite and put down under them and blow them out of their holes. How will you do that? The stick of dynamite is public opinion. There is not a man living but what shields himself more or less behind public opinion. The thief in State's prison, if he wasn't supported by a kind of low public opinion - he consorts with the class of people in society that thinks he is a pretty good fellow - if he is a smart thief he would quit it. The human mind is so constituted that public opinion is dominant and rules us more arbitrarily than law. Our clothing conforms to public opinion. In some countries four pounds of cotton cloth will make a dress suit, because public opinion says so. You will wear a black coat because public opinion says so. You wear a tie and do what you do because public opinion says so. If public opinion says you must paint your houses, they will all be painted. If public opinion says you must plow a foot deep, you are going to plow a foot deep. Now I ask of you, every one of you, that you help make public opinion, and lots of it, and make it quick. We want to get ready for the boll weevil, for conditions that are rather unfavorable to cotton, although if we understand how to manage it there will be no trouble. If you will organize in every county, and all the forces that go to the uplift of men and the betterment of the farm are united, this thing will be transformed in three years and you won't know yourselves. We will be like the man that was up in Alaska, and he hadn't seen a barber, his beard was allowed to grow and his hair was allowed to grow, for two or three years, and he wore the clothing that belonged to that section; and he came down into the States and went to a barber and was shaved, had his hair cut, and he got a new suit of clothes, and went and looked in the mirror and he says: "I swear this ain't John; it is another fellow, new man altogether; it has something of my appearance but I am sure it is deceiving". He looked in the glass and had seen

the other fellow so long that he declared it wasn't that man, and he was in as bad a fix as the man up in one of the New England States who would get drunk, and always drove a pair of oxen and a cart; and the boys to play a joke on him when he got pretty tight one night, drove him off in the woods and unhitched his oxen from the cart, drove them out of sight, propped up the tongue of the cart, and left him there. In the morning he woke up and looked around. "Well", he says, "is my name John or ain't it John? If my name is John I have lost a yoke of oxen; if it ain't John I have found a cart". (Laughter) That is about the way it is,- If these men will awaken. There is good timber. There is no man in your midst but what has good material in him. Some way or other he has drifted into wrong practices and wrong habits. He needs the strengthening hand of public opinion placed about him and encouragement put to his door.

That kind of prosperity will reduce criminality. I am tempted to give this incident, on a plantation in Arkansas, in 1908, an excellent plantation of about 1200 acres of improved land, with forty negro cabins. The owners were non-resident and perhaps their management was not just right. They advanced to those negroes. Apparently they were a set of desperadoes,- there were five murders during that year on the place, 37 criminal prosecutions in the lower courts and 15 prosecutions in the higher courts. They made 179 bales of cotton on a thousand acres. The owners had sunk \$10,000 in money and they made up their minds they would dispose of their plantation. They offered it for sale and one of our agents, a young man named D. R. Swottery, who thought he would learn how to make cotton and do things in a better way, bought it at a mere song, on his own time; and he called those negroes together and put them all under the demonstration plan. He said, "Now, I am going to put you under the Government of the United States; I want you to make cotton just as I tell you". He furnished them some better seed, and encouraged them, and once in two weeks he called them together and talked to them, and interested them in their crop. What was the result? On 700 acres - it was all he planted - he made 300 bales of cotton, instead of 179 bales the year before on 1,000 acres. The year before they did not have the boll weevil; in 1909 they did have the weevil, and yet he succeeded. There

was not a murder nor a criminal prosecution, and only two complaints, during the whole year, and those were settled out of court by agreement; and at the end of the year every negro paid his debts, had a plenty of corn and bacon to last him the next year, and lined up on the day and said, "Boss, we wants to be under the Government again, we likes it". Now it shows that criminality in a certain class of people is largely dependent on their hopelessness and the disappointments that come to them from a lack of making a living or living as they would like to live, and if you can open the door of hope and show them the avenues of prosperity beyond they will change their mode of living and become fairly good citizens. And so I appeal to you not only for the sake of greater material prosperity, but for the sake of ^{the} moral influence upon your State, to readjust things. And we must have your help, every man. Suppose you can make good crops yourself. Why, join the agricultural college that is going to be led by your agricultural commissioner and by your agricultural college; join your agricultural church and try to become a good agricultural church member, so that these people will get agricultural religion and do differently, reform in their methods, and what a degree of prosperity will come to this great State no man can determine. Out of that will grow not only material wealth, but a better school, and a better church, and a better living, and better conditions of life and greater contentment, and so that tide of prosperity will set in toward your country, the value of which to civilization no man can determine at this present time.

I ask you, therefore, not to let it drop after this meeting, but each man I commission you now, in behalf of your State, as an officer in the line to organize in your own township, become a captain of industry and lead your people; make of your own farm an example and call people to see it, and so by moral forces let's build up a higher agriculture everywhere.

Now let me speak of the negro. I suppose we are all pretty good chums, or ought to be perhaps, or we can be. We are all good industrialists. We all look at the problems you have at about the same light, if you have lived long in the South. Politics do not enter into the industries. There is one thing I want to impress upon

you. It is this: If we ever build our civilization to the point that we desire we must make the negro a better industrialist than he is today, and we can begin by insuring him. I think we never ought to have turned our plantations over to him, to have managed just as he pleases. If we can afford a little superintendence, why then eight or ten farmers should join together and have somebody superintend in a certain way. In Texas and Louisiana the past few years the merchants have refused to advance to any tenant on a farm unless he followed our directions. He would go in and ask for an advance and they said, "Are you following Government directions?"; if he said no, they replied "We don't advance to any such men". "If you are a demonstrator or a co-operator then the Government is going to look after you to see that you carry out this plan, and we know that you will make a crop, and we will put up some money for you." That has helped us. I wish to make that tribute right here: We owe to the business men and the bankers a tribute of praise for the help that they have given in spreading the good work, and now is the pivotal time to organize the business men, the bankers, the newspapers, the preachers, and everybody else. You say, "How about the preachers?" I got a letter from a Baptist preacher over in Texas last fall. He says, "Brother, I have been preaching that the earth was the Lord's and the fruits thereof, but I never proved it until your Agent came around and showed me how". But come to find out he had three ladies-aid societies, one for each of the little churches in which he was pastor, and they owed a debt of \$300. Rather a poor country and they had been unfortunate in their crops and they could not pay that debt, they couldn't raise the money. At the suggestion of our agent they hired 21 acres of land. One hired eight acres, the other seven, and the other six, I believe - 21 acres of land they hired. They rented the land and hired it planted and tended and picked, at a given price per acre. At the end of the season they paid all debts, they paid all that they had contracted to pay, they had paid their debt of \$300 and had money left. And that is what he meant. They didn't have to do any work, but through a business transaction, instead of begging money, the church had learned how to

make money out of the soil, and it seemed to that good old Baptist brother just as if he had opened his pocket and said, "Lord, here, fill it", and poured \$300 right down in there all at once. It seemed just that way to him; therefore he said, "I have preached that the fruits belong to the Lord, but I never could quite prove it until you came around". Now let's prove that we can do these things. Organize, every one of you; as many of you as can, set the good example; all of you try to follow. Investigate and see if we can't make a community so prosperous that the world will point to this community as a very prosperous community. We have done so much in agriculture the past two or three years under that marvelously good man, Secretary Wilson, we have done so much in agriculture that the world is beginning to ask for trained men in agriculture; and here last year the King of Rome came to the Department of Agriculture and took one of our men, Dr. Clark, at a salary of \$8,000 a year; this month another of our men goes to take charge of an experiment station at a salary of \$7,000 a year; and on the 12th of this month there sails from New York one of our own men, educated at the Mississippi Agricultural College, who has been in our work for several years, an excellent man,- he goes to be adviser of the King of Siam at a salary of \$6,000 a year and all expenses and salary paid from the day he leaves Washington, and if he stays more than two years he is to have a salary of \$7,000 a year. Now that is only the beginning. The world is beginning to look toward the United States. Why? Because we have made some progress in agriculture, and the world is needing this progress, all over it. Now is your opportunity. You can control not only the clothing supply, but you can largely control the food supply of the world; and you have then your hand upon the two things that will make you enormous fortunes. But more than all that, it will make you great men in this world and I hope in the world to come. You will be men. That will be prosperity full of comfort, full of hope, full of pleasure. We can do twice as much, each of us, if we are fairly aroused, and what we want is to be aroused to the importance of the position we occupy and what we can do if we will.

Now I ask of you, Join with us and for a while let's all go together, find no fault over little things, overlook the mistakes, but all drive to the definite end of making a great State of this State, of making grand homes, full of happiness and prosperity to every man in the State of Alabama. I thank you for your attention. (Loud Applause).

Jan. 11, 1910.

At 2.30 P. M., hundreds of farmers had gathered in the Assembly Hall of the Selwyn Hotel to hear the lecture which was delivered by Dr. Seaman A. Knapp, of Washington, D.C.

Dr. Knapp was introduced by Mr. W. F. Harding, one of our Noted Attorneys.

Dr. Seaman A. Knapp then addressed the assembly as follows:-

"Mr. Chairman, Gentlemen and Ladies:-

It is unnecessary for me to say that it gives me great pleasure to be here, and especially to speak to an audience of North Carolina Farmers. Through the courtesy of the Southern Ry., I am privileged to go and do some things that I could not otherwise do; it has been very kind in that respect. I am traveling, not for the sake of making certain talks, but for the purpose of accomplishing certain things, that I hope to work out by these Addresses. They will probably be disappointing to you, they will be more in the nature of confidential talks to my own people, than fixed addresses to the Public.

Now let us begin here with certain facts. I hear from all over this State and other States a common complaint from the fact that there is a scarcity of labor, and the price of labor is getting out of reach. Let us look at it in a cold way. It is my opinion, friends, that we are on the eve of per-

Mrs. S. Witherspoon Summers
Public Stenographer, Court Reporter
and Employment Agency
Selwyn Hotel
Charlotte, North Carolina

-2-

manent high prices, and we must solve the problem of agricultural, on the basis of having to pay a high wage. That is one of the problems that is before us. My reason for thinking so is this- The enormous discovery of gold is such that we are adding something like \$500,000,000 (Five hundred million dollars) every year to the worlds money. Gold is the worlds money, and when we have plenty of it, it sets in motion the wheels of labor. A great many more people, taking the world over, are working and have employment, than had employment 10 or 15 years ago. This greatly enlarged field of labor means a greater demand for labor, then ~~the~~ of course we have the rise in price. I find that labor has nearly doubled in Japan in the last twelve years, in British India and Africa, and the wage has been going up in some parts of Europe, and in England, and certainly all over the U.S.

The flow of gold into the world will demand more enterprises, will finance more enterprises, I should say, and we may expect a greater demand for labor than at the present time. The demand for labor is increasing over the world more rapidly than men are increasing. A higher civilization, we call it, higher because we have no better name for it, a higher civilization has come to stay, and we want more things. The time was when we got along without Railroads, to-day Railroads are using nearly

two million of men in the United States. The time was when we got along without telephones, and telegraph offices, so we might mention hundreds of other things that have come in making a demand for human labor, and consequently it has raised the price. The demand is going to increase. We have not done much yet in the way of improving our country. We must improve our farms, our high-ways, all of which requires a great-deal more labor, and we must expect to permanently pay that high price labor. How are we going to meet this Issue?

If you pay a man \$1.00 a day and he does so much work, and if he can do twice that much work, he is just as cheap at \$2.00 per day, and if he can do three times that much work he is worth \$3.00 and four times, he is worth \$4.00 per day. The man in British India that used to work for us for 3¢ a day, really was just as well paid as the American who received \$1.25 per day; in proportion to, the amount of labor he did perform, ~~he~~ did not accomplish.

I went into a field one day in Hindostan to see the marking out of ditches; instead of using plows, like we do, they had a board about three feet long with a sharp edge and in the center of it they had a standard, one man put the cord down. A rope was attached to each end, two men pulled the rope- he would put it down and they would scrape aside the dirt, it took the fourth man to boss the three. You can imagine how fast they accomplished their work.

I am inclined to think, that all over the world, men are paid somewhat in proportion to what they can do. In our civilization, the first thing we must learn is how to accomplish four

or five men's ~~work~~ in one day on the farm; that is one of the problems that is up to us.

Another point has interested me in working civilization, it is this:- In our industrious love of individualism, we have regarded all prosperity from the stand-point of how much money the individual makes; that I apprehend to be a mistaken notion, our real wealth and prosperity does not depend on how much the individual is, but how much certain individual makes, because that is not a ^{permanent} ~~prominent~~ asset.

A man may make a lot of money, and may die and his daughter may marry a French Nobleman and take all the money, he has worked so hard to make, to England, or France.

The permanent prosperity, is what we can put in the State. There is a demand at all times to do good to all the people.

We all like to build up our individual fortunes, that is one way. Improve our farms, and gradually move out and improve the State. Do as Railroads do, they don't wait until they can earn the money before they can build a Railroad, but they build a Railroad and trust that the earning in time will pay for this Railroad. I account for the rapid growth of the North Western States to the projection of the Railroads, placing the facilities down. The school house, the hotel, the store, the transportation problem, all solved, and then the flow of population went up. Now you have a great opportunity to adopt this more rapid growth here in the old North State. Let us take an inventory of your State. It is a wonderful State. As a gentleman said to me ~~yesterday~~ that it was the most wonderful land on the face of the earth. I am accustomed to that, but that didn't near come

to being the truth, as what the man said to-day to me. (App.)

If you take a little invoice of your state with the Appalachian Range on the North West, which shuts off the storms which precipitates the rains that flow through the rivers of your State, then this Piedmont Plain East of that, then your Coastal Plain, Nature has done the wonderful thing for you in soil and in climate. Now what have you done for nature and your State.

If I recollect right you have about 13,193,000 acres of land in this State. How much of it has been improved? A little over 1/6th, between five and six million acres, perhaps more than that have been improved, something like eight million acres, but under cultivation you have between five and six million acres. Think a moment of five and six million acres under crop that has to support all the people of this State, pay all the taxes on the land that is cultivated, and the 5/6th of the country that is not cultivated; support all the civilization, build your railroads and pay for everything out of the one-sixth profit. The other sixth you are satisfied to let it be an expense, and hold it for the future. Then while you are doing better than some States; you are only getting about 1/3 of a possible crop out of that 1/6th of your territory, in other words you are doing about 1/18th as well as you might do if you are disposed to. Suppose you go on and make the 5/6 that is not doing anything tributary to your bringing in a revenue in some way. I will give some ways which you can bring it in without cultivating. The 1/6 that you do cultivate make it bring what it ought to bring; that is three-~~fourths~~ times as much as it does to-day. When you

increase the crop two, three or four fold you increase your profits about $2\frac{1}{2}$ times as great as you do the crop. If you increase your crop four fold, you increase your net profits ten fold. Because there are certain fixed charges, those charges are about the same on a small crop as they are on a large crop make as large a crop as an acre will produce.

I took an inventory of seven thousand farms in Texas to see what Cotton cost them in the State at that time. I was perfectly astonished at that result. It averaged about $4\frac{1}{2}\%$ actual cost, leaving out the land value. It cost about $4\frac{1}{2}\%$ provided you made more than one bale to an acre, and when you made $1/2$ bale it cost 7% . $1/3$ bale over 8% , $1/4$ bale up to 11% . If you made the $1/16$ th of a bale it cost 35% per lb., and there were a great many men thinking they were making money farming, and the cotton really cost them 35% per lb., and they were selling it at about 6 and 7% . They ought to have had some Book-keeping. Profit lies in a large crop per acre. So the important thing for agricultural is how to make in the most economical way the largest crop the soil can produce, and leave the soil better able to produce another crop, than when you started. It can be done.

Year by year instead of reducing the fertility of the soil, instead of wasting its substance, nature has so fixed it that it may become better and better as the years go on, and there is no danger to the starvation of human race, as Mr. Hill foretold. There is a plenty of richness in the soil, and our problem is how to get it out economically and a plenty of it each year.

year.

Let us return to the question of improving the State. You have upon the Coast here something like $2 \frac{3}{4}$ millions of wet land, that is practically bringing you nothing. It is neither tributary, not to any great expense to the support of the State and yet its ~~xxx~~ among the best lands of the State. In fact all your lands are the best land. It is only a man that has a thin soil; the land is all good if the man knows how to make it good. (App) It is an old saying to me; when the people ask me if I believe in ferterlizer, I say yes; and then they say how must we apply it, I say one-half to the man and one-half to the soil. (App) It is no use to ferterlize the soil without ferterlizing the man. The man should be ferterlized first.

I was telling out in Missouri about them raising two bales of cotton per acre in that Sandy Soil in Florence, S.C. a gentleman well up in Agriculture, he is Secretary of the State Agricultural Society. He said "I always thought that Sandy Soil, was not good for Cotton. I said all of our soil is made out of crumbled rock, and it is all sand at one time. It is just the way you treat it. It is pretty good soil, if the man is properly ferterlized at the top of it.

Take that $2 \frac{3}{4}$ ~~xxxxx~~ million acres, if they will cut through it great canals, so as to drain it, then you will soon have some land that is worth possibly \$100 per acre. I have experience of lands that would not sell at 25¢ per acre, I saw 22,000 acres put up one day and could not get a bid on them at 25¢ per acre, they were in a few years by irrigation made worth \$50 and \$100 per acre. Now suppose that ~~2x~~ $2 \frac{3}{4}$ million acres

were worth \$100 acre, what a help would that be to the hold State In the old days when men would carry great beams sometime they would get a weak man at one end, and that end would go higher. That is what is the trouble with us now. If all the State was improved, and all the people were lifting, it would go easier, and a small per-cent of the taxation would raise a vast sum and accomplish the work. When it is done it ought to be done under proper basis. Those great canals should be so that they could navigate them. It is a wonderful thing when you thrash your crop, you can put them on a canal boat. You can use these canals for irrigation. Now look they can be used for three purposes:- Draining the soil, transportation of the crop and irrigation of crop.

In some States they assest the value of the land giving the Proprietor or owner of the land a definite number of years to pay it off, there only requiring a few dollars an acre to pay it off. It is all done by Machinery and if done properly is done a great-deal cheaper. Public sentiment worked up to the point, until it can be accomplished. I am speaking about making the State so that one-sixth of the territory does not have to do all the work. I want all the people to be interested and all the ~~land~~ hand to help. you have deluded too many of the hills of the forest. I know what effect trees have on moisture. A single Oak Tree was tested. A tree 69 feet high, 2 ft. 10 in. in diameter about 29 in. from the ground, and that tree when in full leaf, evaporated during iys leaf period 182 tons of water in one year. Now an acre of such trees would evaporate, that is take up from the soil and pass off into the atmosphere, because trees are only living pumps, they would pump up from the

soil about 5,280 tons of water, then the leaves would catch about $1/4$ of the summer rain fall and evaporation directly from leaf. So that an acre of forest would dispose of, about $8 \frac{1}{4}$ inches of water during the summer. The woots would absorb and retain a good-deal more. No wonder a long as forest exhists they stay the heavy tide of rain fall. Every drop of water absorbs 1 thousand degrees of heat, consequently it cools the atmosphere and discharges the clouds, and it makes much more regular the rain fall during the summer. It regulates the rapidity of change in the ~~change~~ fall and spring, and makes it much safer to produce fruit. Though seldom freezes occur until after they begin to remove the timber. I remember in Missouri in 1886 it was absolutely safe for the oranges, and they began to destroy the timber in later years, ~~and~~ at which time they had a freeze and froze all the orange trees. So we change the climate by changing the timber. The source of every stream in the United States should be damed so as to make great Reservoirs and farms. The forests should be reserved, if it is on land that is not cultivated. If you will go to Japan and see how that world has been re-forested, it will give you an idea of what people can do. I remember a gentlemen in the state of Iowa conceived the idea that he would plant 40 acres in Black Walnut, they said you will never receive any reward from that. He lived to reap the fruit of his work. In forty years he sold this 40 acres for \$40,000 an acre, I was in the state at the time he sold it. He made a better crop because after about 2 or 3 years cultivation it cost him nothing except the taxes. Yet he received that much money, about \$25 an acre net every year on the growth of that timer. It was the kind of timber, the value of timber.

Our good pines, our good oak, our black walnut, and all these valuable woods ought to be grown, not only could every farm be put into a forest. In that way you would hold back these floods you would conserve the water which is not only the mighty power, but the most valuable asset of any State. You never can make a great State without properly arranging your Mountain District and your Coast and Central District. Now all of this you are going to say will take money.

We must have transportation, that is another problem We have just begun to make a State. We have done some things. We have ^{cut} ~~gok~~ down the timber, and wanted the soil. The best transportation for the farmer is the good road. With the present apparatus he can go in and out and can reside any where in the vounty he prefers. We must have schools. We want to build up our farms until they meet our purposes. Every farm should have timber, both soft and hard. Every farm should have its home, suitable to the place and family, every section should have the school house, so we can have the proper rule that will take a vast amount of money. The way I propose to get it, is that every man shall start at once to make two or three times the crop he has been making, and make about about eight time as much as he has ever made in the world. Instead of every man considering that money his own he should invest it in a better State and better Society. It us the only way that all the people can accomplish. You may go into any section of the country you please and where conditions are hard and life is hard and you will find poverty, but where conditions are right and the country is built up you find less poverty and human suffering. I want it so that human suffering will be worked out and all the people will prosper.

It is all of our duty to see that this prosperity comes to fellow man. There is no way of scattering it so much as letting our farmers learn a great-deal more net money, and making a greater State? What would you think of an Ax if you went out to chop down a tree and it had no edge, a head on both ends. We must have the best kind of instruments to do business with. We must be able to accomplish the most work in one day. What has enabled the Mechanics to get \$4.00 a day in some sections of the country where they used to get \$1.00, because they can do four ~~days~~ times the work. In old times where they had to saw everything by hand they got \$1.00 per day, now it is all done by machinery. They are just as cheap at \$4.00 as they were at \$1.00. Carry that principal if you please, as they are getting machinery, they are getting better wages. We thought when they invented the sewing mavnine- it is going to ruin woman's work. They are getting better wages now than they did then, because they are accomplishing three or four times the work. We must have better horses. How many first class horses are there in this State or any other State? I doubt whether there are over 5 or 10% of the very best horses very best animals for doing the work, and that is what we need.

IMPLEMENTS. The Implements show that we can do 5 or 10 times as much in a day. There is the two horse Cultivator- I came across a man who cultivates two rows at a time. I wrote one of our Agents in Oklahoma about it, he wrote back "you are behind the times, I have a man that is cultivating 7 rows at a time. He goes over 70 acres in one day." I wrote for an explanation, I found that he drove seven horses. It is only on par-

ticular land, and under similar circumstances. I only mention this because of better machinery. I am not interested in any machine. it is simply to me the problem of how to do the most work in a day and how to do it economically, that is the main thing

After we get a greater crop and leave the soil prepared to get a greater crop next year- what then?

STOCK PROBLEM:- You are getting along pretty well in the crop problem. ~~in~~ The State of North Carolina, can make as much corn per acre as any other State and a good-deal more than any other States. The State of New Hampshire made, I think one year 42 bushels to the acre, led all the States, and it is one of the poorest Corn States that I am acquainted with. After you have learned that then it is the Stock Problem. How to feed the stock this food. The kind of stock that is profitable. You know you have wonderful facilities in North Carolina for stock. Europe for Timber, Asia so little timber that they can't use wood for fires, have to use weeds, Africa has a very little timber. You are on the Atlantic with easy facilities to the great market of the world, you ought to produce the best horses for the United States, and Europe, and when you have established the great prices for them, when you compete with the high prices you will get high prices, but when you compete with scrub work then you are starting out to get a scrub living. If you do good work, that is a good living, and if you do the best work that is the best living. Best horses, cows, butter or cheese, or best of anything, the world wants it. The human appetite and consequently the human market is growing much more rapidly than the human products are growing. I remember some years ago they established

the Creameries in Northern States. The butter is worth so much now you have to wrap it in \$10.00 bills pretty near to get it. 45¢ a pound in the city of Washington, and a pound is not very much either. Long money and a short pound. (App)

You may start out in any of those lines. You want to learn the grass problem. The best pasture. I doubt whether there are ten pastures in any State in the Union. I mean good pastures. I have never seen but one or two. Grass grows more from the top than it does from the root, then you cut the top off. If you had a nice tree, would you cut the top off of it. No. You are cutting off the main part, what is for growth. Feed it down, then take it off let it grow, 6, 9 and 10 inches, then feed it down. You can produce three or four times as much to the acre, then by and by you have a fine pasture. The high quality is gone, as well as the great growth when you cut it down.

The Hay Crop. Only one in 100 know how to cure hay. Sometimes it is hay and sometimes it is brush. The flavor evaporates rapidly under sun. If the hay retains essential oil, then it has high flavor. Animal eats just as we do, that which tastes good. You keep that high flavor in hay and it helps your grain. It all depends on the flavor and on the curing. I am not going into detail this afternoon to detain you. The stock farmer must understand the problem of hay. Cover them with stock and the best stock that is saleable and the world wants it. I remember when we were going through one State we got one man to take a long horn steer and at six years old he put it on the stock market and sold it. He took a short horned steer at 4 years old sold it for \$200, and \$40 for the long horn steer at 6 years old. The

difference was in size and quality. One looked like an elephant and the other looked like a dwarf, put the side by side, and exhibited them through the country. That did the job. We explained how it was done. It was the process of feeding young

animals and feeding them rapidly. ~~It~~ I am simply speaking that the world wants that high quality and will pay for it. When land becomes valuable it depends upon you to make high quality, be sure to get the nesey. Take the Dairy Cow. I don't know of any States of the Eastern States that are not in the Dairy business where more than 1% are not first class. First class cows will give you 6,000 quarts. It stands all the way through. The cow has ~~xxxxxx~~ adopted the same kind of farming that you have four to 1. (App) The other is of human manipulation. You can produce the best cow or the poorest cow, just according to your wealth, the dairying must be a very gradual matter because we have to produce the cow, we can't buy them. The best horses we have to work in gradually, because we can't buy them. It holds out a golden future to us if we will undertake it. You have all the odds in your favor, if you will undertake it. One of the business men Prof³/₄ Kennedy said to me- do you know the best stock country in the United States. He says it starts both sides of the Appalachian consisting with Maryland, following it down into Georgia, turning West. I said why is that the best? I thought you had the best grasses in Wisconsin. It is so called, we have to house our cattle, and when we house them it is like housing people, and they sweat and in the morning when we turn them out 30 degrees below zero they take tuberculosis. That is not the fact in this country- they can stay out all night.

This is a great concession for a man who is not interested in this country at all.

The time will come when you will have a portion of North Carolina which will be one of the best stock regions of the United States. I trust it will be the best stock, it will be one of the best fruit regions.

As I stated yesterday while talking in Virginia: out in Colorado they are selling Orchard lands at \$2,000 per acre, that don't compare with the western portion of your State for Orchard. They must pay for irrigation. You have natural irrigation for the orchard. All Europe and all the world and all the United States want your Apples, there are not enough of them and you can't get enough of them. All you have got to do is to develop your land and raise crops. I want to see that you reap the reward of your labor. Get a farm, high priced land are coming. In the next 30 years is going to do more for lands than the past 300. The price of land depends largely upon population. If we double our population, the last doubling adds about $2/3$ more value or rather twice as much value. If it is worth \$50^{now} it will be worth \$150 when we double the population. Every man should look toward getting land, holding land and improving land for the benefit of the State and holding his posterity.

I am very glad to have spoken for nearly an hour. I have gone over some lines of the work.. The great importance 1st producing a larger crop, having the best improvements, taking best quality of crop and stock, and then above all of putting your money into the state, because things are worth-- well what are we working for? We are working to have better conditions,

better homes, greater opportunities for ourselves and our children. It not the money we ~~xxxxxx~~ accumulate ourselves, but what we do for the State. What we do for the State properly developed where every acre is doing its best. It is just as wrong to have an idle acre as it is to have a lazy man. It may be in timber, let it be in good timber. Get the best stock. The people that start to do that will accomplish great things. They will surprise themselves. How are we going to accomplish this. We have believed in the theory that the school house doors should ~~xxxx~~ be closed to no man of any age, and that the knowledge which is being accumulated over the world should be brought to the farmer. We can accomplish a good-deal and are trying to. You must help. Organize in every country every man who believes in the best work, organize and try and create a public opinion. Insist that these missions for the public good and the personal reward and the benefit of all of us should be carried forward and it will be irresistable. Why do ~~xxxxxxxx~~ we live in a poow torn down house, without paint, it is simply because public opinion will let us. Public opinion compels a man to live on a high plain, high cicilization. Compels a man to work his farm properly and if he gets only 1/5 of a crop je is so laughed at that he quits. (App) Create a public opinion that is irresistable to bring out the resources of your State. Compel those people to help you. Protect your from floods. In that direction I want to say I don't belueve in re-forresting in one stock. Every man ~~xxxxxx~~ ought to habe five acres of building timber. Let us have it everywhere. His fire wood, fences and building timber on his farm. I am ~~xxxx~~ for independence of American farms. (app

I want every man to feel that he is a king of his own rightm that he has everything on his farm to eat, drink and wear. He lives at home. He does not live out of a shop. He does not milk a tin cow out of the Grocery store and does not haul a can garden back to his home. When he can produce it. That is the kind that we want. We have not put forth hope in energy. I told them yesterday we need an agricultural camp meeting and everybody to come to the mourners bench and get agricultural religion. (App) Colleges are alright, but we know enough. What would you think of a man who went into a community and he would say gentlemen what you want is a Theological University instead of that he takes them by the collar and says what you want is to get religion, and change your way of living. We want to live up to our knowledge. It enough knowledge in this State. Being up the average man equal to the best man and get your best man in the lead. To create a public opinion, it can't be done in any other way. If you follow these Associations in every county, watch out your own interest, protect soils, plants, timbers wherever it needs, perfect your streams so there is no danger from floods build your reservoirs, canals on the Coast, high ways and schools what a state will it be. You will have to be a body-guard on your part to keep people out. (app)

The best population Society in the world in the society that make the best state in the world. People will pay a high price for land. I believe that you now have the proposition and you are going to follow it. Lets do it friend.

I thank you for your attention.

Reported by S. W. Summers.
Selwyn Hotel Charlotte N.C.

- A G R I C U L T U R E -

I have been at a loss to know exactly what line of this study this committee desires me to speak today, however, the first thought in my mind is that the great agricultural resources of this wonderful delta country are so well known to every man, why should I come a thousand miles to speak to you people about the possibilities of the Mississippi Delta? The people in this section of the country have been so wrapped up in the production of cotton, it might be interesting to know that the spinners of the New England states, who handle cotton of all classes for the manufacture of cotton goods, find the fibre of the cotton raised in this delta country the finest raised anywhere, and it is of this cotton that the best cotton goods are made. The only cloud that has been on the farmers' horizon of the Mississippi Delta in the Mexican Boll Weevil. You may, many of you, be acquainted with the history of the boll weevil and cotton production in the boll-weevil districts so it will not be necessary for me to dwell upon the effect of the weevil.

During the past few days I have been making a trip through the southern part of your state and I am proud to state that the people of Mississippi are meeting the situation in a manner very gratifying. Since the boll-weevil struck the southern part of Mississippi, like in Southwest Texas, everything that has been done to cotton has been charged to the Mexican boll-weevil; the people have forgotten the fluctuations, good years and poor years; they have forgotten the ravages of the cotton-worm; these things and everything else ~~have~~ that has gone to hurt the crops in this section of the country have been charged to the boll-weevil. Men in the Southern part of the state who have been thinking about the question say what I believe to be very largely the truth. The situation in instances of this kind is this: The planters in that section of the country were in debt; they were just floating along on what credit they were able to get and upon the weevil's arrival in that neck of the woods, the credit could not be so easily gotten, the Merchants,

Banks and people who had been advancing them were not so eager to advance them money; when they refused to advance money to the negroes they left and a great many of them came to this section of the delta. The greatest damage to the southern part of the state is that their labor is gone and they tell me now that there is a tendency for the labor to come back. They have not the necessary negroes and stock to produce cotton and this is their greatest disadvantage. There has been, with every step it has taken from the Mexican border to Mississippi, a greater damage done by the panic than by the actual deeds of the creature. I think if you will go back to Texas and follow the weevil to Mississippi that you will find this statement absolutely true. What is necessary to be done to relieve the situation when the boll-weevil advances? The greatest thing that can be done to meet such situation, in my mind, is for the actual producers of cotton to get, as near as possible, out of debt, to produce his own supplies as well as he possibly can and the problem of producing cotton is easily met, that is, I mean, comparatively easy.

When the planters in the southern part of this state were advised to pick up the squares the most of them said that would be alright on a small piece of land but it was almost impossible to keep the squares picked up where a man had thousands of acres of land. Unless these rains continue in Mississippi we will have a good crop of cotton, the prospects now are fine. We must meet the situation very calmly and very carefully and with absolute determination to do these things that are necessary to be done.

At present neither the department of agriculture or our experiment stations know any extermination of the weevil, the best we can do is to adapt certain means of relieving ourselves of the damage done by the weevil, change our system etc., I firmly believe that under the boll-weevil conditions we can no longer produce cotton alone and send our money for the purchase of corn and other necessities of life and pay for them out of our cotton crop. The corn crop in Mississippi increased by 60% from 1909, making 163,000,000, in 1910.

We were told by Merchant at Brookhaven, I believe, that in 1909 over 300,000 bushels of ^{corn} ~~feed~~ was sold and in 1910 he did not sell any at all.

In Port Gibson we were told, by a merchant, that heretofore he had sold a great quantity of corn and this year he had not sold any at all and all that he had sold was a little oats to the people right in Port Gibson. This shows some change in this respect.

The production of home supplies means a better system of farming because by these means you will not only be able to produce the products necessary to keep the stock and families on the place but by that means to take and use the crop for the purpose of building up the fertility of the soil.

In parts of the delta the most needed thing is drainage. In the boll-weevil district it is necessary that we get into the field to work as much of the time as possible. The water lies upon land on which you have heretofore raised cotton. Good years you will raise good crops on this year and there have been years when the crop on this land was an absolute failure. I noticed as I came in this morning, a canal ditch for the purpose of draining the land, ~~leaving~~ ~~the lowering of the~~ water level by the construction of canal ditches relieve the land of the water. In many section of the United States to encourage drainage, as in Indiana and Illinois, the laws permit them to construct canals and ditches and assess the costs to the owners of the land benefitted by such constructions. In Indiana, Illinois and many other states great good has resulted. I know personally of 10,000 acres of land that, some years ago was not worth 15¢ an acre and after this system had been tried that land could not now be bought for less than \$150.00 an acre. Under the boll-weevil conditions it will be very helpful indeed if we could secure through preparation of the soil, for two reasons, First, that by these means we will destroy the habitating place of the weevil. Second, if we can do this before frost, early in the fall we have destroyed the food that the weevil lives upon and that being the case it will therefore ~~help~~ the conditions to a great extent. It would be an improvement indeed if such could be brought about in every country infested with the boll-weevil because in the destruction of its habitating places and hidings it would put them out of commission. and as he would be deprived of his protection during the winter few would emerge in the

spring. Much can be done by the selection of such type of cotton as will mature early. Everyone knows that much can be done in this way ~~and it is much more important in~~ boll-weevil districts. The staple cotton that is early maturing is better adapted to the boll-weevil conditions, and the farmer should keep this in his mind in his selection of seed and get staple and early maturing cotton. So much has been done by seed selection in the south that I feel confident that as the years go by cotton of that quality will be produced. It will not do to simply plant early as early planting should be modified by this system that is, it is better to plant reasonably early and ~~wait a few days and~~ ~~until the ground warms up so the seed~~ germinate, there are cases of this kind that prove more and more satisfactory. ~~In~~ all the districts that have been subject to early planting the early cotton is often and it has some times been charged to early , but if our entire fields of cotton are planted at a reasonable time it will not be too early to early to give satisfaction. If the cotton has been planted early we should use such instruments as will stir the surface of the soil. There is nothing better than the as many of you well know, and this implement may be used even if the plant has come up. I may well say right here that this alluvial plant, has a tendency, as you know from your previous experience, to be sometimes overrun with weeds. It would be found better to cultivate it as near as possible, and it should be adopted to cultivation simply to institute the improvement. The cutting up of the roots in the ground and cut all the ~~feeding~~ parts of the plant as the weevil feeds more on this than on the stalk. I don't know ~~exactly~~ what he does here but the weevil will be found at that stage of the game feeding on the terminal bud and not upon the stalk. Some people say that the boll-weevil feeds on anything but cotton. The weevil does not feed on anything but cotton. Ther ^{are} ~~have been~~ cases where people have sent us boll-weevil that they claim were found feeding on peas or other matter and upon examination it was either found to be a mistake or the creature sent was not a Mexican boll-weevil. Many steps which have been taken this year are beginning to clear up this confusion. It is also ~~said that~~ spreading the rows helps to destroy the boll-weevil. That

Weevil appearance

That is so indeed. I believe, from observation, that in non boll-weevil districts it would be better to put the rows further apart, and by this means let the sunlight in because the hot sun is healthful. It is true that if you go into Texas where we produce cotton, it don't fail to help the boll-weevil conditions. The cotton does not grow as rapidly but the squares falling on the hot sand is ~~is cooked and this~~ relieves them ~~of picking up the squares~~. Last year in Texas ~~we~~ had 160 acres. Eighty acres of it was growing along under our cultivation and the squares were ^{not} picked up. As the squares fall on the hot sand and the weevil is cooked. Last year in the latter part of June or the first part of July he was unable to get into his field for three weeks, except by man on foot; when we went in to examine and found the condition of the weevil, he told us that he was going to plow up his crop, very much discouraged, that there was no chance to make a crop now, as I remember it was about a week after the rains commenced. We persuaded him not to plow it up and after the rains had concluded, he picked up the squares and made a half bale of cotton to the acre or an average of 538 pounds. We know of a great many cases where this picking up of the squares has done great good. Some say Oh, the cost of it is so great, but it is perfectly possible to use the children for this and it amounts to from about \$1.25 to \$2.50 an acre for the entire season, \$2.50 being the highest I ever saw it cost. In this way a great number of the weevil is kept down. The weevil feeds upon the terminal bud, and with the exception we do not know that he ever does anything else to the cotton but puncture the bolls later in the season and there are many of them that ~~we~~ may take young bolls and every boll it punctures it kills. The females puncture these bolls and lay their eggs. They open the immature and insipiant cotton and kills it.

So that dismisses the two great questions that are now presented to the people in the Mississippi Delta. It will be advantageous as well as successful to have the tenants to raise a garden for their own

use, and make them keep a pig and furnish their own pork and also to raise their own corn. You will find that it will mean the success of the country and that many are doing something to help this. You can raise more than cotton on this delta land. If I ^{knew} ~~thought~~ that there could never be another pound of cotton raised in Washington County, Mississippi I would not hesitate a minute to invest my money in Washington County land. A lady was in my office and said that she owned a plantation in this section of the country and that she had been told that the weevil had invaded it and that she was absolutely ruined. I said "My dear lady if you own a plantation in Washington County and it was once a fine place, don't dispose of it. If you have the coin to fight it through hang on to it. If you haven't the coin then try and sell a part of it and hang on to the rest of it because as the years go by real estate is getting higher and higher." We don't appreciate the real value of our land. Think of the people in the foreign countries who cannot have the products of the farm that we have. There are no people in the world more able to farm than we. Our lands are the best in the world and nothing could be better.

You will find that the prosperity on the average in Texas is far above what it was before the boll-weevil came. I am not saying this to make you take a lighter view of the matter but showing you this to encourage you to get together and meet the problem and to show you that you are able to meet it as business men and farmers. I don't want you to take it like it was taken while I was on a trip through Tennessee. I was driving up a mountain through an almost impassable road and after going through a distance of this road we reached the top of the mountain where we found a fine crop of corn. I asked the old woman who was standing there "What do you want to raise such a nice crop of corn up here and you have no roads to haul it out." "Haul it out? I don't want to haul it out, going to make whiskey out of it and fight it out." I don't want you to make whiskey out of it but I do want you to fight it out.

There are two cases to cause trouble. One is the farmer that is yet inclined to believe that the boll-weevil will ever hurt his

cotton and the other is the man who thinks that he will never be able to raise cotton again after the boll-weevil strikes his section of the country.

Citations from note books omitted here.

These are the results of this system and are seen in point in the planting of your land. If the changes that are necessary are brought about you will find that the Mississippi farmers will better situated. I am state that you will continue to raise cotton in Mississippi and there is no doubt in my mind that Mississippi will continue to be Mississippi as the past and that you will not be spending all your crop for other goods or sending it for other crops.

Thank you.

FLORIDA.

SOME OF THE AGRICULTURAL PROBLEMS OF
SOUTH GEORGIA AND NORTH FLORIDA.

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The advantages and disadvantages of these localities for market gardening are worthy of consideration. Among the advantages we will name your sandy loam soils; your temperate climate; (while reasonably free from frost it is not so warm but what men can toil in the field with safety and with energy.) your proximity to the Atlantic Ocean must always regulate your freights in the interests of the farmer. Your disadvantages I should say are first,- that your lands are largely stump land and it is rather expensive to dispose of the stumps. A second disadvantage,- usually considered such,- is that the islands of the Caribbean Sea are more tropical and can get their products in the markets of the great cities earlier than you can. As we progress in this talk to-day I will discuss these different points.

It is scarcely necessary to discuss the matter of removing the stumps because you all understand that as much possibly as is necessary, and I only make this observation,- that it is the height of unwisdom to allow them to remain in the field and to attempt to cultivate around them. The loss every year is too great. Whatever the expense, my judgment is that in a

Florida,---2

cultivated field for vegetables especially they should be removed at once.

A sandy soil is a much better soil than the average man estimates. You will recall that all our soils are simply the crumbling of rock. The great deficiency in sandy soils is their inability to carry moisture enough to make a crop. They carry only about twenty-five per cent of moisture whereas a good clay loam will carry as high as eighty per cent. Then again they are warm and dispose of their moisture rapidly so that in sandy soils there are periods when the plants grow but very little and frequently stand almost still for weeks, especially when there is a periodic drouth. One of the great problems in all agriculture is to so improve the soil and deepen it that it can carry moisture enough to nourish the plant at all times, even in seasons of drouth. Sandy soils therefore require a large amount of green vegetation plowed in. All the leaves from the surrounding forest should be gathered. Green crops should be plowed under. While sandy soils carry only twenty-five per cent of moisture, humus or decayed vegetation will carry one hundred and eighty per cent, consequently the retention of moisture depends on filling the soil with a large amount of humus. The humic acid will help dissolve the food material

Florida,---3

from the particles of the sand. The great value of sandy loam soils, when they are properly improved by the removal of stumps and the plowing under of green crops or use of sufficient stable manure, is that they are easily worked. They are warm; they force vegetation along rapidly; they seldom suffer from excessive rain. For gardening purposes it is better to make a soil about fifteen inches deep, possibly twenty inches would be better. For this purpose the deep plowing and the use of the beggar-weed and the velvet bean and cow peas make it possible to create conditions that are favorable at all times for agriculture. Right at this juncture it might be well to say that one of the greatest mistakes made by farmers or by merchants in moving into a new section is in buying too small an area. Real estate men will tell them that five acres is enough; possibly it is in some cases just for a garden but it is not enough to profitably use for all purposes. Every gardener must have a horse or horses and he should always provide for their support. He needs some pasture and some meadow and some grain land. It is important to rotate for gardening purposes the same as for any other. For instance the garden may become so weedy that it is almost impossible to keep the weeds out. A good cover crop for one season will destroy nearly all the weeds, besides enriching the soil a great many dollars

Florida,---4

by the supply of humus. I therefore advise that no one should buy less than twenty acres and I believe that forty acres is better because it is not wise to depend upon a single crop. A single crop plan is just as much a failure in trucking as it is in anything else. And some orcharding is necessary. It may be oranges, it may be peaches or pears, or whatever it is, with the pasture and with the meadow and the rotation of crops on land it is seldom advisable to buy less than twenty acres.

Your climate enjoys one particular advantage and that is that you are liable to have frosts. That is considered a great disadvantage but I prefer to occasionally have a frost than to have such an abundance of insect life as they have in the tropics.

*Investigations in Porto Rico.

Another point that should be guarded against is not to go into truck gardening at any great distance from a railroad because an acre of truck produces a good many loads and it is too expensive hauling it to the depot and looking after the shipments, etc. Then, as I have stated, every farmer should be a complete farmer. He requires his horses, and some cows and some poultry and some pigs if he wants the best results, and dispose of his waste to advantage.

Florida,---5

A point that should be discussed here is the use of fertilizers. It has been thought almost impossible to produce truck profitably without the use of a large amount of stable manure and where there is any great body of men trucking it soon becomes impossible to obtain this. Section after section is now inquiring where they can get any stable manure for their market purposes. Let me make a suggestion here,- that if the muck from your swamps and the leaves from your forest be gathered and brought together and composted with a little soil, the use of some acid phosphate and in ordinary years with some cotton seed or cotton seed meal, a compost can be made that will answer all the purposes of stable manure and at a much less cost than transferring stable manure from a great distance. It is astounding the enormous amount of valuable fertilizer that is burnt up by forest fires. The leaves are Nature's own fertilizing matter, provided by the Creator to nourish the trees, and there are acres and acres of woodland where the wood is not of very great value but are valuable for the leaves they furnish. Men pass these by and purchase an inferior article, the commercial fertilizer. There must be decayed vegetation in the soil and the leaves furnish that decayed vegetation at the same time that they furnish nitrogen, phosphorous and potash.

Florida,---6/

Let me call your attention to another feature of truck gardening. In the present condition of things it is absolutely necessary to have quite a large body of men, that is it is just as important that a good many truck men be in one locality as it is to have a number of stores to make a city. The single trucker is at the mercy of commission men and every other class. He can neither buy fertilizers to advantage, nor sell his products. By a complete organization and stationing a man in the great cities to receive and deliver the shipments the business can be carried on with reasonable safety.

Another feature should be considered. The tropics can put their products in the market a little earlier and hence it may be necessary to watch the markets very closely to gauge delivery at that period just after the tropics have sent in their shipments and before sections still farther north are prepared to invade the markets.

In the conduct of market gardening it is necessary, as it is in all other lines of business, to study it thoroughly, have

Florida,---7.

complete organization, produce the best qualities, ship nothing but perfect fruit and in the best condition and watch all the lines in the trade,- the production, the sorting, the packing, the shipping, the delivery and the returns. The community that goes at it right will undoubtedly succeed.

Another feature should be considered and that is cold storage,- whether it is better to have some cold storage at the point of shipment so that the shipments can be held back or forwarded, according to circumstances; or whether it is best to have the cold storage in the cities. That is a matter for practical investigation though ordinarily it is better for most articles to have the cold storage at the initial point because it can be done at so much less expense than in the cities, and it is under your own control.

Another feature where large business is done is the ownership of your own cars. I note that nearly all the large manufacturers, the beef men, the manufacturers of furniture, and of wagons, own their own cars. This might be to the advantage of the truck men provided there are enough of them combined to own cars that are better adapted to shipments than those they have at the present time.

Lang
10
X The Farmers & The Common wealth

NC

11 How to make a State in which
X the rural masses shall
prosper

SC

12 The making of a great common
X people in the rural districts

Ga

13 The Farmers Cooperative
X Demonstration Work

Fla

14 Some of the farm problems in
X South Ga & North Fla
Ala. ~~Amistia~~ Huntsville

20 "Some farm problems in Ala"

Crumville

17 Cotton the greatest of cash crops
West Point

18
"Diversified" Farming the best for
Eastern
Mississippi

19 Jan Memphis Profitably
" Can cotton be ~~successfully~~
produced under boll weevil
conditions? "

15 Jan ~~from Louisville~~ Anniston Ala
Dairy & Stock interests

Jan 21 Lexington Ky
~~Breeds of horses, cattle and~~
~~all domestic animals, his banding~~
A kind of farming territory
suited to the Bluegrass region

At Anniston, Ala, where he
will speak on Jan. 15 - at
his subject will be "Dairy
and stock farming among the
most profitable lines of
husbandry in the U.S." in
which ad. will be pointed
out the peculiar advan-
tages of NE. Ala for the
development of these
industries.

At Greenville, Miss., where
he will speak on Jan-
17 at _____ how his subject
will be "Cotton, the Greatest
of Cash Crops," in which _____ will
be shown the importance
of maintaining the Cotton
Industry in the South and
the modifications in the
present system of farming
necessary to be made
to succeed under boll
weevil conditions.

At West Point, Miss where
he will speak on Jan.
18th at _____, his subject
will be "Diversified Farming
adapted to conditions in
Eastern Miss," in which
will be discussed the general
problems of diversified
farming and the greater
profit to be realized
from it.

At Memphis

"How to Make Cotton
Under Good Wool
Conditions," in which
will show that cotton
can be made successful
by ^{in the Mississippi} ~~in the~~ ^{average} ~~years~~
under good wool in-
festations, and the
methods by which
this can be done.

At Huntsville, Ala.,

"Some Farm Problems
in North Ala," in which will
be set forth the lines
of farming most profitable
and best adapted to
that section.

At Swinington, Ky.

"Kinds of Husbandry
Suited to the Blue Grass
Territory" in which it
will be shown that certain
~~kinds of husbandry are~~
~~suited to the Blue Grass~~
region is especially
adapted to certain
kinds of husbandry
and these are among
the most profitable
of all.

A MESSAGE TO THE FARMERS.

DR. KNAPP'S ADDRESS AT LEXINGTON, KY.

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A great deal of interest has been manifested, editorially and otherwise, throughout the South in the coming tour of Dr. Seaman A. Knapp, of the Department of Agriculture in January, and many inquiries have been received by him asking what topics he will discuss on this journey. Dr. Knapp has very kindly consented to furnish the press, and through the press the farmers, with the subjects of his addresses.

At Lexington, Kentucky, where he will speak on January 21st at 2:00 P. M., his subject will be "Kinds of Husbandry Suited to the Blue Grass Territory", in which it will be shown that the blue grass region is specially adapted to certain lines of husbandry and these are among the most profitable of all.

The same general method will be pursued in the addresses in the several states, outlining in each such policies as are most important and applicable to the rural population.

A MESSAGE TO THE FARMERS.
DR. KNAPP'S ADDRESS AT MEMPHIS, TENN.

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A great deal of interest has been manifested, editorially and otherwise, throughout the South in the coming tour of Dr. Seaman A. Knapp, of the Department of Agriculture in January, and many inquiries have been received by him asking what topics he will discuss on this journey. Dr. Knapp has very kindly consented to furnish the press, and through the press the farmers, with the subjects of his addresses.

At Memphis, Tennessee, where he will speak on January 19th at 2:00 P. M., at the Business Men's Club, his subject will be "How to Make Cotton Under Boll Weevil Conditions.", in which will be shown that cotton can be made successfully in the Mississippi Valley in average years under boll weevil infestation, and the methods by which this can be done.

The same general method will be pursued in the addresses in the several states, outlining in each such policies as are most important and applicable to the rural population.

A MESSAGE TO THE FARMERS.

DR. KNAPP'S ADDRESS AT WEST POINT, MISS.

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A great deal of interest has been manifested, editorially and otherwise, throughout the South in the coming tour of Dr. Seaman A. Knapp, of the Department of Agriculture in January, and many inquiries have been received by him asking what topics he will discuss on this journey. Dr. Knapp has very kindly consented to furnish the press, and through the press the farmers, with the subjects of his addresses.

At West Point, Mississippi, where he will speak on January 18th, at the Court House at 2:00 P. M., his subject will be "Diversified Farming Adapted to Conditions in Eastern Mississippi", in which will be discussed the general problems of diversified farming and the greater profit to be realized from it.

The same general method will be pursued in the addresses in the several states, outlining in each such policies as are most important and applicable to the rural population.

A MESSAGE TO THE FARMERS.

DR. KNAPP'S ADDRESS AT GREENVILLE, MISS.

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A great deal of interest has been manifested, editorially and otherwise, throughout the South in the coming tour of Dr. Seaman A. Knapp, of the Department of Agriculture in January, and many inquiries have been received by him asking what topics he will discuss on this journey. Dr. Knapp has very kindly consented to furnish the press, and through the press the farmers, with the subjects of his addresses.

At Greenville, Mississippi, where he will speak at the Court House on January 17th, at 1:30 P. M., his subject will be "Cotton the Greatest of Cash Crops", in which will be shown the importance of maintaining the cotton industry in the South and the modifications in the present system of farming necessary to be made to succeed under boll weevil conditions.

The same general policy will be pursued in the addresses in the several states, outlining in each such policies as are most important and applicable to the rural population.

A MESSAGE TO THE FARMERS.

DR. KNAPP'S ADDRESS AT ANNISTON, ALA.

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A great deal of interest has been manifested, editorially and otherwise, throughout the South in the coming tour of Dr. Seaman A. Knapp, of the Department of Agriculture in January, and many inquiries have been received by him asking what topics he will discuss on this journey. Dr. Knapp has very kindly consented to furnish the press, and through the press the farmers, with the subjects of his addresses.

At Anniston, Alabama, where he will speak on January 15th, at 11:00 A. M., his subject will be "Dairy and Stock Farming Among the Most Profitable Lines of Husbandry in the United States.", in which address will be pointed out the peculiar advantages of Northeast Alabama for the development of these industries.

The same general policy will be pursued in the addresses in the several states, outlining in each such policies as are most important and applicable to the rural population.

A MESSAGE TO THE FARMERS.

DR. KNAPP'S ADDRESS AT HUNTSVILLE, ALA.

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At Huntsville, Alabama, where he will speak on January 20th, at 10:30 A. M., at the Elks' Theatre, his subject will be "Some Farm Problems in North Alabama", in which will be set forth the lines of farming best adapted and most profitable to that section.

The same general method will be pursued in the addresses in the several states, outlining in each such policies as are most important and applicable to the rural population.

A MESSAGE TO THE FARMERS.

DR. KNAPP'S ADDRESS AT CHARLOTTE, N. C.

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A great deal of interest has been manifested, editorially and otherwise, throughout the South, in the coming tour of Dr. Seaman A. Knapp, of the Department of Agriculture in January, and many inquiries have been received by him asking what topics he will discuss on this journey. Dr. Knapp has very kindly consented to furnish the press, and through the press the farmers, with the subjects of his addresses.

At Charlotte, North Carolina, where he will speak on January 11th, at his topic will be "How to Make a State in which the Rural Masses Will Prosper." His object in this address is to impress upon the farmers of North Carolina some definite line of work which, if ^{consistently} ~~constantly~~ followed, will make North Carolina, with all its natural resources, a great State in which the rural masses will be prosperous.

The same general method will be pursued in the addresses in the several states, outlining in each such policies as are most important and applicable to the rural population.

A MESSAGE TO THE FARMERS.

DR. KNAPP'S ADDRESS AT LYNCHBURG, VA.

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A great deal of interest has been manifested, editorially and otherwise, throughout the South in the coming tour of Dr. Seaman A. Knapp, of the Department of Agriculture in January, and many inquiries have been received by him asking what topics he will discuss on this journey. Dr. Knapp has very kindly consented to furnish the press, and through the press the farmers, with the subjects of his addresses.

At Lynchburg, Virginia, he will speak on January 10th, at 11:00 A. M., when his topic will be "The Farmers and the Commonwealth.", in which he will set forth the marvelous resources and strategic position of Virginia, and what the farmers must do to realize on their natural assets; prosperity is not a matter of accident, but the result of a wise policy persistently pursued.

The same general method will be followed in the addresses in the several states, outlining in each such policies as are most important and applicable to the rural population.

Dr. Knapp's Schedule for Jan. 1910.

Leave Washington,	Jan. 9,	10:10 P.M.
Arrive Lynchburg, Va.	Jan. 10,	3:25 A.M.
Leave Lynchburg, Va.	Jan. 10,	2:35 P.M.
Arrive Charlotte, N.C.	Jan. 10,	9:30 P.M.
Leave Charlotte, N.C.	Jan. 11,	9:40 P.M.
Arrive Greenville, S.C.	Jan. 12,	1:05 A.M.
Leave Greenville, S.C.	Jan. 12,	1:10 A.M.
Arrive Macon, Ga.	Jan. 13,	10:45 A.M.
Leave Macon, Ga.	Jan. 14,	1:35 A.M.
Arrive Jacksonville, Fla.	Jan. 14,	8:30 A.M.
Leave Jacksonville, Fla.	Jan. 14,	7:55 P.M.
Arrive Anniston, Ala.	Jan. 15,	9:45 A.M.
Leave Anniston, Ala.	Jan. 16,	2:55 A.M.
Arrive Greenville, Miss.	Jan. 16,	7:50 P.M.
Leave Greenville, Miss.	Jan. 18,	6:40 A.M.
Arrive West Point, Miss.	Jan. 18,	1:30 P.M.
Leave West Point, Miss.	Jan. 18,	6:40 P.M.
Arrive Memphis, Tenn.	Jan. 19,	10:30 A.M.
Leave Memphis, Tenn.	Jan. 19,	8:15 P.M.

Ar. Huntsville, Ala. Jan 20
 Lexington Ky Jan. 21

S. A. Knapp

Farmers Cooperative demonstration ^{work} and its
results.
by S. A. Knapp.

As I have listened to the able addresses of this body of educators two points have been impressed upon me, 1st - The importance of a thorough and broad education for the youth of the land. 2nd - The necessity of increased taxation for more liberal equipment and for salaries to instructors that approximate compensation. Let us broaden the inquiry. Why not extend the domain of education to the toiling masses who pay the taxes and thus improve human society, turn the forces of environment to the betterment of the race and everywhere apply forces for the uplifting of mankind?

The topic assigned me is Agricultural Education. I will limit my remarks to one line - Education necessary for the toilers upon American farms.

~~Farmers Co-operative Demonstration Work, and its results.~~

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~~In a landscape everything depends upon the view point.~~

As we look at the United States from one ^{view} point we are amazed at its marvelous growth, the wonderful additions to its wealth and power, the rapid increase of its cities, its manufactures, its commerce, and the phenomenal development of all its resources, until we are ready to cry wonderful ! wonderful ! wonderful ! Let us change our view point and we note that some of its prosperity is more seeming than real; that our harvests have been made at the expense of the wealth of the soil; that our lands are becoming impoverished; that there has been a general lowering of the civilization of the country by the removal of the most intelligent and progressive classes to the city, and especially of the more ambitious young men, and their places filled by foreign-born people from the south of Europe.

Thinking people note with alarm the rapid growth of cities, as compared with the country; the concentration of wealth in the cities, and the gradual transfer of political influence from the country to the city.

From 1890 till 1900 the total gain in population in the United States was 13,110,872, of which the cities made 7,643,817, or 58.3 per cent and the country gained 5,467,055 or 41.7 per cent. Farms, including improvements and stock, now furnish only $\frac{1}{5}$ of the total value of the property of the United States.

While rural conditions are actually no worse than they were thirty years ago, relatively they are worse. The cities of the United States have moved forward by leaps and bounds. They have the most improved public buildings and residences, excellent libraries, schools and churches, paved highways, rapid transit, telegraph telephones, and the news of the world left every morning at the door. The toiler in the city receives a wage to correspond to his luxurious environment. I use the word toiler in the broad sense, including all laborers.

Rural conditions in many of the states, and especially in the southern states, have changed but little in 30 years. The houses are a little more dilapidated; the fences give evidence of more decay; the highways carry more water in the wet season, and are somewhat less easily traveled in the dry; but the environments are about the same; no paint, and slight evidence of thrift. the same old mule stands at the door with his rope line on the ground, hitched to a plow that Adam rejected as not up to date; the same old bushes are in the fields, and the same old weeds in the fence corners; no strange sights disturb the serenity of Rip Van Winkle; wages are about the same, and the conditions of farm life are almost exactly as they were thirty years ago.

The Southern States are not the only sufferers from this failure of the agricultural forces to keep step with the progress of the world.

3.

From 1890 to 1900 there was a marked decline in the value of farm property in New York, Pennsylvania, New Jersey, Delaware, and all the New England States, except Massachusetts. It was 2 millions in Delaware, and 168 millions in New York.

This is attributable solely to a ^{relative} decline in productive capacity of the rural portions of these states, and to the strong competition of the manufacturing interests. The manufacturers of the United States, with 10 billions of invested capital, as against twenty billions in agriculture, with $5\frac{1}{4}$ million laborers, as against $10\frac{1}{2}$ in agriculture; with 11 million horse power, as against 18 million in agriculture, produced $5\frac{1}{2}$ billions net of manufacturers, while the net income of all the farms of the United States, including live stock, is only $4\frac{1}{4}$ billions. In manufactures $\frac{1}{3}$ the workers, with $\frac{1}{2}$ the capital invested and $\frac{2}{3}$ the horse power, produce 35% more annually. than the total products of the farms.

If the value of the products of the manufactures of the United States, less the amounts paid for raw material, be divided by the total number of wage earners, it gives a productive power of 1078.11 for each laborer employed.

The productive power of farm workers differs widely in different states. For the sake of comparison, we will take Vermont, Iowa, North Carolina, South Carolina and Alabama. Each farm laborer in Vermont produces an average of \$327.37 annually in farm crops; adding 90%, the average income from stock per laborer, and we have a total earning ^{power} capacity of 417.37 for each person employed upon the farms of that state.

4.

Each farm worker in Iowa produces \$611.11 annually in farm crops. Adding the income from stock, \$477.00, and each working person shows productive power of \$1088.11 annually.

Estimated in the same way, the total annual productive power of each worked on the farms of South Carolina is \$147.46; in North Carolina \$159.75; in Alabama \$150.98.

Of the states mentioned, Iowa alone shows a productive capacity of the farmer equal to that of the mechanic.

The young man meets this problem: Shall he stay on the farm, accept the wages offered, and live the comfortless life such wages can provide, or shall he go to the city, where we can earn three to five times as much and have what his ambition aspires to? If that is the whole of the proposition, and he is a man of judgment and energy, he will go to the city. The number that make this choice will increase in geometrical ratio as long as rural conditions remain as they are.

Who takes the places of these thrifty young Americans who abandon the farm? In the main, the foreigner; and as long as the foreigner came from the north of Europe that exchange was not especially detrimental; for the thrifty German and Scandanavian soon became excellent Americans.

Later their places have been taken by thousands from the south of Europe, to the end that rural conditions are worse in many districts than formerly.

It is simply an industrial invasion of the Goths and Vandals, and, unless arrested, we shall awaken one day to the fact that the rural districts of this great commonwealth are

foreign and only semi-civilized.

Good men have seen for many years what must be the ultimate effect of this lowering of country life and in their various ways have tried to hold the best country element to the farm. Some have attempted to stay the hosts of high-bred youth seeking the city by the cry of patriotism. The average American boy thinks he can be more patriotic and aid his country more on an income of one thousand per year than on two hundred.

Another plan is to give better educational facilities to the country. Education is a great source of power and cannot be prized too highly. Instead, however, of its being a remedy for desertion of the country, it promotes it and always will, so long as the earning capacity in the country is so much lower than that of the city. The only way the young farmer under present conditions can be held in the country is to keep him ignorant.

Another class of patriotic men think the remedy lies in teaching agriculture in the rural schools. Low earning capacity in the country is a matter of practice and not of theory, and can never be corrected by books.

Others advocate an improvement of rural conditions, better highways, better schools, free rural delivery, country telephones, more newspapers: all very good and worthy of commendation. Still others call for more Farmers 'Institutes and additional agricultural colleges. Excellent suggestions: but every highway may be as good as a Roman road,

#6.

with a free delivery mail box and a telephone at every crossing, and the box stuffed with newspapers; you may hold a Farmers' Institute at every third house and establish an Agricultural college on every section of land in the United States, and the flow of young men from the country to the city will not be arrested in the least, so long as the earning capacity of the average city laborer, or clerk, or professional man, is at least five fold of what the same talent can command in the country.

These are not new suggestions. Most of them have been in operation 40 years or more, with what result? Upon the whole, rural conditions are just as unfavorable today as ever. There is only one ~~effective~~^{effective} remedy: Increase the earning capacity of country toilers.

The question arises, can it be done, or must the conditions continue till the final overthrow of free institutions? How can we increase the earnings of the farm toiler? Principally in ^{seven} ~~six~~ ways:

1st. By a mere thorough tillage of the soil. In the South by deeper and more frequent plowing; by rotation of crops and the filling of the soil with humus, by the planting of legumes and turning under the green crop. This course will easily double the average yield of cotton, corn, oats and wheat, overcome excessive drought, or moisture, and insure the harvest in adverse seasons.

2nd. Better farm drainage. Drainage will remedy the excess of moisture in wet weather and the lack of moist-

#7.

ure in dry weather, both so deleterious to the growing vegetation. It renders possible soil cultivation at all times and prevents the accumulation of hydrostatic water to the injury of the crops. It increases and deepens the effect of the forces that make plant food in the soil and gives a vitality and power to the soil action scarcely possible without it.

3rd. The selection and planting of better seed is one of the grand teachings of progressive agriculture. Wonderful possibilities are folded within the covering of a seed. It transmits to the future plant the likeness, the vital forces, the natural and the acquired habits of its immediate parent, and a long line of ancestors.

The future plant may be modified and improved by intensive cultivation, but no nurseing can entirely overcome the inherent vitality or weakness which it may have inherited. The value of good seed can scarcely be estimated. ~~This is~~ helpful; but ~~it is not adequate~~.

4th. The use of economic plants, better suited to our particular soil than those we are at present cultivating, can be made a great aid. For example: Our people persistently plant corn and oats for their work stock, when a ration of cowpeas and sorghum ~~meal~~, equally nutritious, could be produced at less than half the expense. We feed our stock as we provide food for our families, without regard to nutritive value or cost of production. One of the large planters of Louisiana saved \$31,000.00 in one year by substituting

#8.

leguminous crops, with other cheap foods, for corn and oats, and the animals were equally well nourished.

5th. In the reform movement commercial fertilizers, judiciously used, have an important part. Almost as much damage, however, is done by the ^{the} indiscriminate use as by their entire neglect. Properly used, they are a great aid to production.

6th. The sixth item of reform and the one from which the greatest net gain will be realized, at the least cost, is the use of more power and improved machinery upon the farm. A careful inquiry into the causes for the farm workers in different states varying so widely in the values produced will demonstrate that it was mainly due to the ratio of horses or mules employed to the number of workers upon the farms.

In Iowa, where each farm worker produces \$611.11 annually, exclusive of stock, nearly four horses per worker were used. In Vermont, with an earning capacity of \$327.37, two horses per worker were used, and in South Carolina, where each farm worker produced \$144.46, one mule for two laborers was the average farm power. An analysis of of the Southern States shows a much smaller use of power on the farm, and, consequently, less use of good machinery than in the Northern States, and a corresponding ^{ly} lower earning capacity. Where the South Carolina farmer uses one mule, weighing 800 to 900 pounds, and one man to plow, accomplishing less than an acre per day from 3 to 4 inches deep, the Iowa farmer uses at least three horses, weighing from 1400 to 1500 pounds each, and plows 4 acres per day, 6 to 8 inches deep.

#9.

He uses $5\frac{1}{2}$ times the power and accomplishes about eight times the work in a day, if depth of plowing be considered. What is true of plowing is equally true of other lines of farm work. There has been considerable instruction along the line of how to produce larger crops per acre, but they have not taught the importance of working more acres in a day.

This is the key to agricultural reform: more power and better machinery on the farm, and more work accomplished in a day. ^{He} Heavier mules, and more of them. Away with the half a mule farmer and convert the one mule farmer into a four mule farmer. What revolutionized manufacturing in the United States and made us the first of productive nations? More power and less hand work. What will hold the boys on the farm and multiply the wealth of our farmers? More power and less hand work.

^{Yth} The next important item in this agricultural uplifting is the raising of more farm stock. It is noted that in Iowa the value of farm stock annually marketed is \$477.00 for each worker, while in South Carolina the value is \$4---The value of stock of all kinds, per farm, in Iowa, is \$1214. In South Carolina \$134.00 Alabama \$162.00; Vermont \$742.69. These amounts represent the total livestock, and include teams, cows, swine, etc.

Comparing South Carolina and Alabama farms with those of Vermont and Iowa:

#10.	S.C.	Ala.	Vt.	Iowa
Resident owners per cent	33.7	38.3	68.5	50.5
Per cent not owned by residents	66.3	63.7	21.5	49.5
Per cent improved	41.3	41.8	45.00	86.5
Value of buildings.	174.00	154.00	1125.00	1053.0
Value of implements and machinery	43.00	39.00	228.00	253.0
Fertilizers per farm	29.00	15.50	13.50	00
Yield per acre	4.47	3.93	8.16	7.62
Sales of livestock in 1899, per farm	5.73	8.79	48.67	503.25
Number of milch cows per farm	4/5	1 $\frac{3}{4}$	8.6	6-1/3
Swine " "	4-1/3	6-1/3	3	43-1/3
Horses)	1-1/6	1-1/8	2-1/2	5-1/5
Mules)				
Hens, including Guinea	12	21	22-1/2	84-1/2
Value of Poultry produced	10.72	10.14	21.90	42.20
Number of eggs	63 doz.	84-1/2	200	443

This array of figures tells a sad story of small earnings, poor environment, scant living, and general poverty. Where the value of the buildings on the farms in a state averages only \$154.00, a large per cent of them must be below this amount. They have neither cows, pigs, nor sheep. They toil with a horse or a mule for two or three laborers, with a total annual productive capacity of \$148.00 gross earnings for each toiler. Where a large per cent of the farms are worked upon the shares, and one half goes to the proprietor, it leaves about \$74.00 to each toiler for a year's work.

It is with intense pain and regret that I call attention to the impoverished condition of the average farmer in at least seven of the Southern States, a condition entirely unnecessary and easily remedied.

#11.

I have outlined the methods by which this can be done, and I estimate that there is a possible 800% increase in the productive power of the farm laborers of the average Southern States, and I distribute the gain as follows: 100% to rotation of crops and better tillage; 50% to better drainage; 50% to seed of higher vitality, thorough bred and careful selected; 50% to the use of more economic plants for feeding stock, and the abundant use of legumes; 200% to the use of more and better mules and farm machinery, and 200% to the production of more and better stock.

This would require that the idle lands be used for stock, and the value of grasses and legumes be understood; that the soil be deepened, strengthened, and made more active by deep plowing, intensive cultivation, and the turning under of green crops. In a word, it can be accomplished by the universal practice of good farming. But allowing for shortage and failures, my estimate is a gain of 500% in 10 years, if the proper methods be used for working out the reforms. How can it be wrought out? In the same way that the revolution in our mechanical industries was accomplished. Fifty years since the mechanical industries were hand crafts, slow cumbersome, non-remunerative. The transformation was not made by placing books on the value of steam and electricity in the common schools, but by building factories all over the country and absorbing the business. The machine harnessed to power showed that it could do better and cheaper work than done by hand methods.

#12.

Old methods were swept away, and lo! we are leading the world in mechanism. The sewing machine, the mower and the reaper have come into general use, not by writing books about them, but by placing them in the hands of the people for trial.

There is only one effective way to reach and influence the farming classes, and that is by object lessons. The following is an outline of a successful plan of influencing southern farmers by object lessons:

1st. The demonstration must be limited at first to two or three standard crops, and must include the principal cash crop, a general food crop, and a well known renovating crop. In the south, cotton, corn and cow-peas meet these requirements. Any attempt to introduce new crops or to try a great variety is wasted energy. The farmers know cotton, corn and cowpeas. Now if it can be shown that a change of methods or a change of seed will greatly increase the crop, the first important step has been taken. They are then ready to believe in more; but a failure here is fatal. Even in dealing with these plants the instructions must be simple and appeal to the farmer's judgment. Advice should be given along thoroughly tested lines, inclining always to the safe side.

2nd. The demonstration must be simple, and, at first, confined to a small area. Two or three acres will give just as good a test as a larger tract, and at the commencement the farmer is more likely to successfully carry out a demonstra-

#13.

tion on a few acres than on his entire farm. When he sees the advantage of the better methods he will increase the area as rapidly as possible. Generally the farmer has neither the machinery nor teams to inaugurate the plan on a large scale at first.

3rd. The question of successfully interesting the farmers is a personal equation. 1st, they must have some knowledge of the men who are managing the movement and make out the instructions. 2nd, the men who act as field agents must be practical farmers; no use in sending a carpenter to tell a tailor how to make a coat, even if he is pretty well read up on coats. The tailor won't follow. The farmer must be a recognized leader, progressive, influential, and able to carry public opinion with him. Public opinion is brought into harmony and made forceful by the support of the press and the co-operation of the best farmers and the leading merchants and bankers. Generally a committee is organized of three of the best progressive farmers and three merchants and bankers of standing, who hold monthly meetings at the call of the traveling agent, and greatly assist in carrying out the reforms. It is a good policy to insist that a small demonstration be taken by the most noted dry goods box whittler in the village, if he does any farming, and, if he has a garden, induce him to make a test on a few feet or rods square. If he succeeds, he is one of the best advertising mediums known, and will take more pains to show his success than ten business men.

About the poorest co-operator for our purpose is the stock man with a very large farm. He has too much to do and does not generally give the demonstration personal attention. The intelligent small farmer is the best co-operator.

Instructions to agents. Sometimes farmers have peculiar views about agriculture. They farm by the moon. Never try to disillusion them. Let ^{them} believe in farming by the moon or the stars, if they will faithfully try our methods. It does not pay to waste good breath on such matters. Avoid discussing politics or churches. Never put on airs. Be a plain man, with an abundance of good practical sense. Put your arguments in a sensible practical way. Secure the country village influence and induce the citizens to give active aid.

When the tide of local opinion has set in favor of better methods of farming it will be found easy to maintain interest. In the monthly rounds of inspecting farms, never fail to notify eight or ten of the prominent men in advance and have as large a company as possible visit the demonstration farm with you.

This attempt to reconstruct farm methods is not such a single handed contest as might be supposed. There are many aids.

The State Experiment Stations have done a vast amount of valuable and practical work and they have issued bulletins fully setting forth what they have done. They are great helps.

There are ~~xxxxxx~~ many farmers who are well informed on agricultural subjects; they have been well educated; they are intelligent, progressive and thrifty; but they are widely

#15.

scattered and not sufficiently aggressive for the public good. They must be sought out, organized, and their influence used to the limit. It simply requires leadership.

There are other helpers. Convince the owners of farms who reside in town, that there is a way to get more rent; drive home the thought - to the merchant that low earning capacity limits purchasing power, circumscribes trade, and casts the constant shadow of uncertainty upon the day of settlement; awaken the banker to the fact that it is unwise to loan to men who farm the best land on a fourth of a possible crop, and poor lands on a tenth; it is banking on unthrift and discounting doubtful paper with poverty endorsement; convince and arouse this land proprietor, this merchant and this banker, and they will not only give their influence, but will insist that all their tenants adopt the new methods. Country papers want something to talk about and they will open their columns to the gospel of agriculture.

After the first year there will be no trouble. The farmers who try the new system and succeed find that their success has made them noted; their neighbors attribute it to the seed they use, instead of the hard work they did, and they are offered double price for all their seed. This has been the result in almost every case. They sell their cotton seed and seed corn at two and three times the ordinary price, and from weak advocates they become strong, zealous and aggressive. The most influential friend of the new dispensation in agriculture is the boll weevil. It is amazing with what tenacity men who have been trained to depend upon cotton

#16.

as a cash crop adhere to it and refuse to believe that there is value in anything else the soil can produce. When lands have been worn until they do not raise a paying crop of cotton, the true southern farmer sells his farm for what he can get and moves on to a virgin tract. This has been the policy in the south for two hundred years.

As an illustration of how this revolution in agriculture is aided by influences we have named: Last winter the Tyler, Texas, Board of trade issued a bulletin to the farmers of Smith County and Northeastern Texas, strongly urging the farmers to adopt our co-operative methods. One letter in this bulletin to the farmers put the case thus: "You have given your way of raising cotton and corn a fair test - the test of years - and it has proven a failure. You are raising five to ten bushels of nubbins per acre instead of twenty to fifty bushels of good corn. You are producing one eighth of a bale of inferior cotton per acre, instead of one half to one bale of the fleecy staple. Wont you now try the Government plan of raising cotton for the year 1906, if only as an experiment?

If you will do so precisely according to its directions (which are here given) and do not find it an improvement over the old - as judged by the result - then I shall not advise you to pursue it farther. But I know it will give you a larger yield than the present methods, for I have seen it proven. In 1898 I traveled for hundreds of miles through the boll weevil districts of Southern Texas.

#17.

The weevil had been there for several years. I saw hundreds of farms lying out; I saw a wretched people facing starvation; I saw whole towns deserted; I saw hundreds of farmers walk up and draw Government rations, which were given to them to keep them from want. Their rich lands dropped in price from forty dollars to five dollars per acre. The Government did not stop with giving out food to those in distress. Its department of Agriculture at Washington put its experts to work to find out ways of checking this pest. I am glad to say that Smith County is going to have five demonstration farms this year, located in different parts of the county; so that every farmer who will take the trouble to go and look may see for himself what can be done in raising cotton and corn with new seed and by improved methods."

The pages of this bulletin abound in statistics showing the value of better tillage. One farmer followed the instructions of the Department of Agriculture and made 7 large bales from 12 acres, and his neighbor followed the old plan and made two bales on fifteen acres. One writer states - "But there is no sense in our farmers going through what the farmers south of us did. We should profit by their experience. Where will you find the most cotton raised this year (1905)? Why right down in South Texas, where a few years ago I saw the farms deserted. They finally took the Government's advice because they had to and they are now raising one-half to one bale per acre, and the boll weevil just as thick as

#18.

as they ever were. Can agricultural conditions be changed? By simply talking? No. By demonstration? Yes.

Human society in its organization presents this peculiar phase: some of the primary groups appear to be attached to no system of influence, and, hence, cannot be reached influentially except by direct contact. Rural society in the south is largely upon this plan. There is a public opinion emanating from and moulded by the limited number in the canton, but rarely reached or moved by the larger public opinion of the state or the nation, and then only by personal contact. The general view point is one of doubt and suspicion. If, however, one of their number can be induced to plant a trial field, all will watch it closely, and if he succeeds, the people at once swing from a stubborn doubt to an unreasoning faith, and they become the most zealous of converts. After you have proven your work for two or three seasons some way it is noised abroad among these people, and they are ready to accept at the first opportunity.

Last December I located a demonstration farm in Central Texas where there was a colony of eighty families of poor, white farmers from South Carolina and Georgia. Conditions were as unpropitious as could often be found. Every farmer, as far as I could learn, wanted to sell out. The overseer of our demonstration farm commenced to put it in order and plant the crops. Nothing was said. Special effort was made not to tell our plans, and let curiosity have full scope. Last week I visited that farm and the overseer said "Can't

#19.

you come and talk to these people some time? If they knew you were here tonight, this yard (and it was large) would not hold the farmers that would come out to see you and hear you talk about farming." Within these limited circles is considerable local rivalry. If John Smith takes a Department demonstration, Sam Jones thinks he can beat it, and quietly informs his neighbors that he intends to do so. Others join in the competition. Finally the whole neighborhood is arrayed on one side or the other, with the result that all produce better crops. It is an easy proposition to enlist the masses in the army of reform, if wisely managed; but impossible, if undertaken along the lines usually pursued. Frequently the first farmer in a community where a demonstration is to be made, is secured by furnishing some improved seed and showing how to plant and work it so as to maintain its vigor and enable him to sell seed to his neighbors. With success in his first trial he becomes an earnest advocate of the co-operative plan. Thus the influences gather force and soon thereform has attained mighty proportions and a state has been revolutionized.

In the main, the average farmer receives our work kindly and adopts it readily. There are some sections that object to our efforts to make the average farmer independent, fearing he will soon have farms of his own. These want poor whites and more of them. Such conditions are mainly confined to the Delta lands. Even there time will change

public opinion in regard to our system, for the boll weevil will appear, profits will vanish, and new conditions must be accepted.

The question may arise "How can such large territories be successfully handled and be held under control by the central office?" Easily. While there are thousands of farms they are all classified under a few general divisions, depending upon the nature, mechanical conditions, and relative exhaustion of the soil, the temperature, rainfall, and standard crops to be planted. With these carefully booked, it is comparatively easy to give instructions that are applicable. The field work is managed by traveling agents, who make daily reports. In the central office it is the work of one man to attend to the business and correspondence. There is a large amount of personality about the work. The central office must keep in touch with each co-operator and impress him with a personal interest in his success. This is done by monthly letters to each, with instructions or inquiry. The records of the office show the condition and progress of every farm.

I have outlined the cause for the low average condition of agriculture in the south, and the remedy that has been effective.

It is a peculiarity of our humanity that there is an under-
 current of belief, ^{but} nebulous, ^{assured}, that some how the people ^{will}
 were to be helped. Some have turned the eye of hope to
 religion, as the saving power that will change conditions
 and bring relief. Some look expectantly towards universal
 education, and assume that knowledge will accomplish all
 things, will build fences, plow the soil and insure the har-
 vest, while the husbandman lies in the shade and builds his
 dream castles. Others have placed great faith in science.
 Science loudly boasted its power to unfold the mysteries
 of the soil; it grandly pointed to the water, the atmos-
 phere and the sunbeams and claimed the power to harness
 these to the chariot of agriculture, and bring to the earth
 a wealth of production, fabulous and inconceivable; but
 science in its relation to agriculture has, as yet, been
 mainly a beautiful dream and a gilded vision, ~~uncertain~~
~~and illusory~~, ^{it is a failure of application and not of merit} so far as the masses are concerned. Relief
 came, but in a way never anticipated by the people. The
 people expected relief by some miracle of finance, a relief
 without toil, the bounty of the nation or the gift of God.
 But when told that permanent help could only come by human
 effort, that they must work out their own salvation, just
 as prosperity, liberty and civilization can never be donated
 to any one; but must be wrought out, fought out and lived
 out, till they are part of the being of the people who
 possess them, they were amazed.

In January 1904 I went to Texas to take charge of the
 campaign against the boll weevil. I called a meeting of

#22.

prominent men to discuss the situation; upon explaining the plan of the Department, every face showed astonishment, one bolder than the rest explained his views thus: "Do you men to tell us that you have come empty handed to Texas to relieve the distress of our people, and restore confidence, and that you know of no way of destroying the boll weevil? And further, that you furnish no seed nor fertilizers, and do you intend to tell our people, 'Your remedy is to get out and hustle', if this be true, we are to receive one of the ^{of} greatest disappointments." I explained our plan. That people were rarely benefitted by gifts; that our system of tillage insured a crop, that while they were waiting for the Government to give them a few thousand, they could increase their income twenty five to thirty millions, add to their manhood and become independent.

They accepted the explanation and heroically followed our instructions; they won. In the fall of 1904 the farmers of the Boll Weevil districts of Texas found themselves better off, than for many years; fewer debts and more money in the bank.

This demonstration was no new theory with me. We used it in Iowa from 1870 to 1880 when that state was transformed from a wheat growing to a stock producing commonwealth.

In 1886 a movement was made to settle a tract of land in Southwestern Louisiana, as large as the state of Connecticut with sturdy immigrants from the Northwestern states. Thousands of circulars were issued and hundreds of prospective settlers came. The natives of the country were

stock men. They were not farmers, and without exception they did not believe those lands were productive, or could be made so, and they took pains to tell this to every inquirer.

The immigrants supposed of course that the natives knew, and we suddenly found that settlement was impossible. I recall a car-load that cost me considerable trouble to secure. They arrived in the afternoon, heard the natives talk and left before I could see them in the morning. In this emergency we resorted to demonstration. By making large concessions, a thrifty and energetic western farmer was located in nearly every township, under an agreement to do his best. As soon as they were fairly established, and able to prove anything, immigrants were taken to their homes where they could see things. From that time our immigration movement was a complete success, and today twenty-five thousand settlers are ready to tell you that it is the most prosperous portion of the South. We then learned the philosophy and the power of agricultural demonstration.

Many of the poor Acadian natives, who had not tilled the soil, had never attended school and could not speak a word of English, were converted by demonstration and are today wealthy farmers. More than 1000 farmers are depositors in the banks of Lake Charles, *La. Of this number over 600 are natives* and a few are accounted among the best farmers and the most wealthy citizens of our section. Such are the possibilities of Demonstration.

We have located the disease and found the remedy.

Shall we apply it? We shall if we fully realize what this

evolution in agriculture signifies to the individual and to the nation. In the South Atlantic and the South Central states, there are eleven states that border on the Atlantic and the Gulf of Mexico, adding Arkansas and we have twelve states which contain about one fourth of the population of the United States. The gross products of the farms in these twelve states amount to slightly over one billion annually. If this could be increased two fold it would pay the national debt and all the expenses of the Federal Government in one year. Our whole civilization would respond to the influence, as if touched by the prophet's rod. Better homes, highways, clothing, schools, churches and means of communication - a general uplifting, such as could not occur without it. How are these things to be procured without such reform? By reading about it? By better schools? By more taxation? It is impossible to raise much revenue by doubling the assessment of a cipher or depending upon the voluntary contributions of poverty. The widow's mite went a long way in intention; but fell infinitely short in actual cash. From a nation^{al} stand point it is our patriotic duty to carry out these reforms. The defense of a nation, as well as its commerce, is a problem of vast equipment. The ocean and the commerce of the world belong to four nations, simply because there are only four nations with sufficient wealth to build and maintain vast navies. War has become a problem of finance. The wars of the future must largely become economic wars, and the invading force will be an army of industry. The nation of the greatest

#25.

and the most economic production will win. But today I am not viewing this campaign for increased production in the country from the national stand point. I am thinking of the people, of rose covered cottages in the country, of the strong, glad farmer and his contented, cheerful wife, of the whistling boy and the dancing girl, with school-books under their arms, so that knowledge may soak into them as they go. I am thinking of the orchards, and the vineyards, of the flocks and the herds, of the waving woodlands, of the hills carpeted with luxuriant verdure and the valleys inviting to the golden harvest. What can bring these transformations to the south - greater earning capacity of the people.

I realize that to accomplish all of this the domain of knowledge must be broadened, soils must be deepened, aerated and fertilized, excessive moisture removed and protracted drouths obviated, so that the harvest may be luxuriant and reliable. In conjunction with greater production must go greater economy. In the waste of the farm are fortunes for the farmer. If the insects and harmful seeds could be converted into poultry and eggs; if the unused grasses could be transformed into beef, mutton and wool; if the waste of the forest could add its contribution to the general good; if the apple, the peach, the pear, the plum, the cherry and the grape could be substituted for the briar patches; the road side thickets and the worthless brush, covering millions of acres it would be the inauguration of an era of reform worthy of a great people.

#26.

For this greatest of economic reforms Congress has allowed \$40,000. per annum - about \$60.00 per county, or ~~one third of~~ ^{Three} ~~cent~~ for each farm in the territory assigned me. We are annually expending about seven hundred millions ^{in the U.S.} for the benefit of the nation, or nearly ~~ten~~ ^{nine} dollars per capita. For this industrial reform in the country, the sum granted divided by the population amounts to one ~~cent~~ ^{dollar} for ~~three~~ ^{two} thousand people. Even that sum has increased the wealth of the nation more than fifty millions in two years and the work is going forward.

The time is opportune for this great work. Friends will rise up to aid it. Providence, destiny cannot be thwarted. The revolution must continue till the problems of poverty are solved, the measure of human happiness full and the reproach that has hung over our rural domain, by reason of unthrift, ignorance and poverty shall be wiped out and America shall possess a yeomanry worthy of a great

nation. In advocating a campaign of demonstration

for increasing the earning power of the people on the farms I would not detract from any line of spiritual or intellectual uplifting - Churches must be established, schools and colleges maintained, science taught and country betterments promoted, but they must keep step with increasing productive power. I am simply calling in question the possibility of obtaining all these grand results of a high civilization without any money to pay the cost and without earning power to sustain them.

a If delightful climate, fertile soils, annual rainfall, the number of navigable rivers, the abundant supply of valuable timber for constructive purposes, the inexhaustible mineral wealth & the magnificent topography - wonderful valleys, fertile hills, picturesque mountains are essential factors in the making of a mighty nation then the South Atlantic and the South Central States of our Union were designed by nature to be the seat of great activities along broad lines with a dense population rich in all material things, the masses well housed, broadly educated independent and progressive ^{with these States} equal area upon the globe could compare in the natural resources above enumerated in their virgin condition.

They were settled mainly by one of the most virile races that ever touched foot to western shores. Why did ~~not~~ the results which appeared certain to follow fail to

to materialize? It was due to some economic errors that crept into their civilization at an early period and show the far reaching effect of even slight deviations from the correct fundamental laws that govern civilization. Their labor was mainly compulsory ~~not~~ imposed by another race. I was concerned the dignity of labor. Because unavoidably the character of the labor determines the dignity of the thing done. It ought not to be thus, but it is ~~and~~ always has been from the formation of human society. This condition was a barrier to free labor and an obstacle to the immigration of small farmers accustomed to till their own lands. These influences in many cases contributed to an immigration of free labor and small farmers from the South.

C The Second great economic error was
The adaptation ^{by the Southern States} of the ^{Cash} Over Crop System
of farming. True they chose their staples
with wisdom. Tobacco, rice, Sugar cane and
Cotton - four of the best staples and they
found world markets for them. Upon the
surface it appears just as sound a policy for
a farmer to produce one cash crop and sup-
ply all his wants from the sale of it - as it is for
the manufacturer to limit his output to one article
instead of many. There is this difference the
manufacturer is sure of his product and at uniform
cost and of standard quality. The farmer is never
certain of the quantity, quality or cost of his
crop and should always throw out this anchor of
safety, that what ever may occur to reduce the
cash crop it shall not curtail the food supply ^{clothing &} ^{of the} family nor place ^{sequel} ₃ improperly the home

C 12 - states

2. That ~~gradually adopted~~ ^{cash} The one crop system of farming. For they chose their staples wisely - tobacco, rice, sugar cane and cotton - four of the best, and they found world markets for them. The great objection to the one cash crop system is that it ^{limits knowledge, narrows citizenship, and} does not foster home building and does promote commercial farming. It lacks the element of safety. If the one cash crop fails, every thing goes, living, clothing, schooling etc. It might be asked why the many small farmers of the South did not diversify. Farmers can not produce just any cash crop they like. It must be something

2 The price of virgin lands averaged so low that in many cases it was cheaper to make a new plantation than to restore the impoverished soils of the old.

P. The foregoing statesmen ^{presented} only the general view. There were ^{under the old conditions} many planters of high character and great intelligence who maintained an excellent standard of agriculture. They bred the best stock of the world and followed an excellent system of crop rotation.

P. The period of greatest disaster to agriculture in the South was from 1861 to 1890, when ^{nearly} all that was excellent in the old civilization was swept away and little of value substituted. ~~The~~

During this period the South was laid waste by the barbarism of war; there are untold and terrible tales, in some states more than equal to the ^{in numbers} ~~ruined~~ white population and but slightly ^{in number} ~~improved~~ to its ^{former} ~~present~~ condition. The ballot and came into the possession of lands as owners, renters or occupants for hire. A lowering of country life drives out the better classes just as an inferior civilization supplants the more valuable. That the lands were held by a great and virile race is shown by the fact that Caucasian civilization was not completely overwhelmed by the such masses of another race and condition. Non resident ownership increased and with it a more careless tillage, immense waste of fertility by erosion and a general reduction in the character of farm improvements and equipment.

(2) ~~For~~ Till within the past decade and a half there has been a steady lowering of rural conditions and ^{steadily declined} ~~general~~ influence upon national life.

F. / ~
Two other causes of universal
effect have appeared with tremendous
force in the depression of several
conditions in the South. One is
transportation and the other is
money. Both vital to farm values
and farm profits.

The total cost of transportation of products
from the farm to the seaports has been too
high. The poor highways have been one
factor contributing to this. The ^{large}
^{commercial} crop system has been another, because
it supplied freights only a few months in
the year, furnishing an over supply for such
periods and a deficiency the remainder.

The one cash crop intensified the deficiency
in money. It took most of the ^{annual} proceeds
of the crop out of the country to buy
needed supplies and it created an
abnormal demand for money ^{to move this main crop} at the
time it matured.

9 Another serious obstacle to
general progress has been a deficiency
of labor. The employers of labor
in factories and in the construction
of railroads have been able to pay
a much higher wage than farmers
could afford and have drawn
not only laborers from the farms
but many small independent owners
of land from their homes.

Notwithstanding these adverse
conditions there has been a great im-
-provement in the South in the past
12 years due in part to the general
prosperity of the country and in part to
the heroic efforts of her ~~own~~ people
~~aided by the U.S. Department of Agriculture.~~
~~This advance has been in nearly every~~
~~direction but it is especially notable~~

They have put forth almost super
human efforts to reconstruct what was
left upon the best basis, to rebuild what
of value had been destroyed and to
create whatever was necessary to round
out the best civilization of the age. No
people ever worked more heroically
and with greater unity of purpose.

The higher prices of cotton, sugar & rice,
the three great cash crops of the South
has for the first time since disaster came
to it provided the means to get out of
debt and improve her condition.

With the improvement of her fortunes home
building, the encouragement of education,
the founding of schools, the establishment
of manufactures and a comprehensive system
of internal improvements have received prompt
attention. The South is needed and her
most significant sign of awakened interest
is her effort to place agriculture upon
a better basis. One object of this article

is to urge that in this great uplift which marks the
people of the South as patriots and heroes there shall
not be omitted from the solid foundations placed
under this new civilization some of the most essential
supports that ~~can~~ uphold and perpetuate a republic
in the South.

2) In the great cities and in the manufacturing centers there ~~always~~ has been ^{for centuries} and probably will continue to be the unrest that arises from a conflict between aggregated capital and organized labor. The great counterbalancing force is a ~~great~~ body of prosperous and contented small farmers distributed over the entire country.

A prosperous intelligent and contented rural population is ^{therefore} essential to our national prosperity. The world's experience has shown that the best way to secure this is to encourage the division of all the lands into small farms owned and operated by one family. There are two ways to look at small farms. One is, and the common way, that it is a place to make a living but rather of hard peace and should be sold even as any thing easier is found. The other is that the owning of land is a mark of honor, that a patent to land is a title to nobility, a right to sovereignty.

The ownership must be absolute and independent so that each proprietor is the independent sovereign of a portion of the United States, with the final authority in through the ballot ^{to} ~~the~~ ^{control} local county, state & national governments, a position of great dignity and power.

We speak of the sovereign people here. They to be sovereigns in fact or in theory only? If in fact then each ^{citizen} must own and control something in a sense he must be lord of a certain territory. It is called a

2^d farm but legally it is a subdivision
of the state to which the farmer is
given perpetual title that he may
have the means to support his position
as an independent sovereign with dignity
and that by absolutely governing a small
portion of the United States he may learn
to wisely assist in governing the
whole This is the attitude of the state
towards individual ownership of land
~~If the ^{owner} ~~possessor~~ ~~is~~ ~~then~~ ~~to be regarded~~~~
~~as independent sovereigns it includes the~~
~~intention that all if possible shall be owners~~
~~of ^{land} ~~farms~~ and these ^{lands} ~~farms~~ ~~must~~ ^{should} be~~
of an area that will come nearest to
the development of the perfect citizen and

93 ruler 21- must not be so large that
the income can support the owner without effort on
his part. ~~because he must have a knowledge of things arising~~
~~from practical experience~~
~~The man employed by their right to learn~~
~~from the standard of management~~
~~21- should not be so small that it will~~
make a mere tailer out of the owner.
for this means the intellect
21- should be large enough to provide
good farm equipment, buildings
machinery and stock & furnish labor
for the family. The annual income must
be sufficient to improve the farm, educate
the family and provide a reserve for
old age. The United States has fixed that
amount at 160 acres. ^{right} The acreage of the farm must
as semi arid sections is might require more than double that
number and in larger cities less than one fourth might answer
the purpose

Under the new order
of things to attain the best results the
policy of maintaining large plantations
in the South must be abandoned. All the idle
lands must be brought into use and
made profitable, labor ^{for men & women} must be
considered honorable, diversified agric-
-culture must supplant the one crop system
to insure safety and all the best conditions
for a life of usefulness, culture and influ-
-ence must be established in the country.

Before rural life can be held in the
highest honor the following conditions
must be secured

- 1 A much larger per cent of the farmers
must ^{be broadly} educated and of high character ^{+ their families.}
- 2 The farm lands must be ^{so} improved and
managed as to yield a ^{very certain} profitable return
for labor expended and more profitable than employment in
the city.
- 3 ^{farm} Improvements must be durable, suited to
the requirements of the farm, convenient and
attractive.
- 4 Rural environment, Churches, Schools, ^{highways}
means of communication, social conditions
and opportunities for accumulating wealth
and for civic preperment must be better for
the masses in the country than in the city.

J) The problem is how to effect these rural changes for the better - Education being so important many have thought and still think that the establishment of agricultural schools will accomplish the object - Forty years trial has shown that 99 per cent of the youth college trained whether in schools of agriculture, science or classics leave the farms for reasons not difficult to understand P The Education required is one that can reach the adult masses as well as the young and will hold them to the farm - The answer is in a failure to see that a situation can not be overcome by a college education - It is a mass problem and must be met by a mass training The practical and sure way of accomplishing the result is to induce the farmer to try better methods and note the results - to improve their farms, to make tillage less expensive and production more certain, to double the crops ^{per acre} and halve the cost ^{solves} While the farmer successfully solves the problems of the farm, his experience widens and he becomes a broader man till

12. He is broad enough to size up the whole situation and has the means to execute his plans. As men broaden they will have aspirations for their children and better schools. Better education will accompany the general uplift -

Well-informed men who are successful farmers are generally agreed that a thorough knowledge of agriculture can be acquired in one way only and that is by working out the problems of the farm upon the farm. There is a world of details, of business knowledge, skill and tact about farming that can be acquired only by contact with the soil and experience in the life of a farmer.

"P This education of the farmer upon his farm by working out problems in the field and receiving the answer in the crib or granary is like all education a personal matter and each man must do it for himself. This points to the small farm, personally worked as best for the man, for the land, for society and for the state. P Education is what a human being absorbs in a usable form by experience, ^{by observation} and ^{from} oral & written instruction. ^{The world's most important school is the home & the farm.} The small farm ^{to secure the best results} practically is forced to diversification and to have personal knowledge of all details relating to the farm by the owner and his family. For safety ^{the} ~~the~~ ^{to get an income from}

2) a variety of products, because a single crop may fail in yield or meet a ^{non} responsive market. This wider range of products broadens knowledge and in the natural course of training the man becomes skilled in the management of soils, ^{cereals & grass} crops, fruits, forests, domestic animals, farm machinery and farm improvements.

He is forced to be a student of markets and the art of buying and selling to the best advantage. He learns the requirements of society & the advantages of cooperative effort. Cooperation may commence with an exchange of labor with a neighbor because he is short handed and he extended until there is co-operation with several in buying & selling, in promoting better highways, schools & churches and the general uplift of the neighborhood. This small farmer acquires his knowledge from many view points, as a laborer and ^{an} employer as a wage earner and a capitalist, as a producer and consumer as an owner of land and a payer of taxes and a recipient of the benefits that come

m from rural improvement and
the maintenance of law & order
no school nor college in the land gives
such varied instruction as this
farm life and impresses it so lastingly
upon the mind.

¶ 21- is the ~~High~~ School in which
Common Sense is taught. Common
Sense is a thorough knowledge of
common things and how to use
them to the best advantage or if
principles how to apply them. This
sort of wisdom can only come through
experience. Many persons with slight
acquaintance with books are perfect encyclopaedias
of common and exact knowledge so useful
in everyday life. ¶ No nation can be
great without thrift. Thrift is the conserva-
tion of the products of toil and is taught
by lessons of privation. Opulence
and large incomes are no teachers
of thrift. Even such as receive a fixed
salary or the wage workers learn less of
thrift than the small farmer, for
the harvest is ended the products ~~must be~~

It must be stored with ^{to meet the wants of the family} care and all the better if there is no credit system.

The small farmer becomes conservative. He is not sure of the harvest nor of the markets and when these are made sure he has learned that the problems of another season must be met before the present income is safe from depletion.

Communities of small farmers tend to promote common honesty, a respect for the rights of others and for law. No one is rich enough to dominate his neighbors nor so poor that his influence may be disregarded.

Their stock, products and property are exposed to trespassers and depredators. Hence a common interest unites them for mutual protection. The education acquired on the small farm broadens citizenship because it is a many-sided education and gives correct impressions of many phases of life. All over the world the small independent farmer is a staunch supporter of conservative government. They are intense lovers of home and opposed to radical changes.

0 ^{As a source of wealth}
P Ultimately the small farmer learns to keep a reserve of cash against emergencies and these aggregated accumulations become very important factors in the banking capital of the nation for they are ^{more} reliable than deposits from commercial sources.

The vast sums of money necessary to carry on the business of a nation are not derived from the deposits of capitalists but from the aggregation of millions of thrifty small depositors.

This is especially true of England, France, Germany and the United States.

P It has been observed for years that the sons of small farmers develop managing ability. From their earliest recollections they are compelled to do things and to act independently. It is from this source that the greatest number of managers of the various enterprises of our country have been largely drawn.

10
S. P. 101

If all is considered Education that leads on
develops or trains the individual then the
amount acquired in even in the best school
is only a fraction of what ^{the average man must know} ~~well informed and~~
~~to succeed in life~~ ~~people and captains of industry know~~. It is
of the highest importance ^{then} to the State that this
greater body of knowledge should be correct,
broad, conservative and elevating. Liberal provision
has been made by the State, by churches & by
individual gifts for schools but the molding of this
greater body of knowledge to the best interests of
society has been mainly left to the caprices of
individual effort. The State can with propriety specially
foster such conditions of society, such lines of industry
and such occupations as evidently tend to mental and physical
vigor, to breadth of understanding and to the best citizenship
and to the stability of the State. For these ends no more
potent influence has been found than an intelligent,
prosperous and contented body of thrifty small
farmers. State and ^{the} National Government have

aided by the gift of lands for homes, by the
the promotion of rural schools and free mail
delivery. What further steps can government
rightfully take to promote rural conditions

2 In as much as ^{the net} values of all the products
of the farms depend upon the cost of transpor-
tation as well as the markets, government should see
that rural districts are served at a freight charge
based on the cost of service performed, equitably
distributing the burthens of transportation

2 From the fact that country roads are a part of
the transportation problem just as much
as rail roads and water ways, the more important
highways through the country should come
under state and national supervision and contrall
and thus be made a part of our great system
of improved transportation

3 Some plan should be devised and framed into law
by which the farmer may participate in the use
of an equitable portion of the vast ^{time} deposits of

the people's money at a moderate rate of interest
and upon such securities as they possess

This would open the door of opportunity
for thousands of Thrifty tailors to seek and
establish several houses

04 By every means possible the great
dignity of land ownership should
be impressed upon the men and youth
of the present generation; but mere
brutification whether verbal or printed
will not accomplish the object - There
must be real dignity. That is the men
on the farms must have character, manliness
education & energy. 2 The farms must show by
their improvements and management that
they belong to that type of a man. for
the improvements are the visible forms of
what is in the man. It is impossible
to impress upon any class that there is much dignity in
residing upon a farm with impoverished soil
and dilapidated improvements. 3 Five things
must be accomplished before rural residence

recognized by the local market and the large plantations made the local market

A third economic error from the stand point of the State was the ^{great number of} large plantations in the South ^{worked under one management} a plantation of several thousand acres is like a great factory; Each person employed is limited to one kind of labor. He may work in the stables, or garden or ^{be} a field hand or be assigned to general improvement & repairs.

In any event it is one line of work he follows for life and he knows no other. That may be good as part of a machine - but is bad for the citizen. The large plantation as generally managed blocks highways, interferes with schools, ^{and} retards rural development and promotes class distinctions as against mass development.

TP A fourth economic error was failure to utilize the wealth of minerals ^{in the South}, the vast forests of woods, matchless for constructive purposes and other natural resources of the South so as to build a Commonwealth that could furnish markets as well as raw material and thus in a measure become self-sustaining and independent.

TP The neglect of common schools throughout the rural sections and the slight attention paid to internal improvements were the natural results of other policies adopted ~~in some sections the large plantations occupied nearly the whole territory and made it difficult to establish or maintain schools for the poor small proprietors~~

VIRGINIA.

THE FARMERS AND THE COMMON-WEALTH.

--oOo--

Virginians have inherited two things of superlative value, - their racial blood and their domain.

The people are the most valuable asset of any country. Virginians are descended from the best race of men that has ever peopled the globe, courageous, liberty-loving, energetic and intelligent.

Next to race in value stands the country. Virginia is a marvelous domain. Its Coastal region is penetrated and dominated by an immense inland sea full of harbors and rivers. On the west of the domain it has to its advantage a range of mountains which protects its moisture and regulates its temperature. East of this, occupying all of Central Virginia, is the Piedmont shelf or plain, and on the coast a great variety of loam soils. The rivers penetrate to the heart of the State. But above all, the proximity of Virginia to the great cities of the Atlantic Coast and to the crowded population of Europe is an advantage not easily overestimated.

Further, Virginia lies in the latitude of the greatest historical empires, - Persia, and Greece and Italy.

These advantages, however, avail little unless properly used. A wrong policy may vitiate and even thwart the best natural conditions. This we find to be true in that wonderful oriental region, the Yangsee Valley of China, the great Valley of the Ganges, and the Nile.

What occurred to those countries? What has taken place in Virginia?

The most important things to be determined as early as possible in the history of a State are,

1 - The first thing is to get more land at work. In Virginia there are 27,281,280 acres of land and only 4,751,385 acres are producing crops. About 1/6 of the land supports all the people - pays all the taxes and keeps up the civilization.

Get more land into cultivation. Improve the 800,000 acres requiring drainage. Pastures.

2 - How to conserve the natural resources.

3 - What line of husbandry, under the conditions of soil, climate, markets, etc., will prove in the end to be the most advantageous to the State and for the individual.

Virginia,---3

The Coastal plain, overlaid with sand, is extremely well adapted to truck gardening

The Central portion or Piedmont Terrace is as well adapted to general farming, stock-raising and dairying as any portion of the United States.

The Blue Ridge and its outlying hills are excellent for the fruits and for forestry.

It is of vital importance first to learn how to do common farming successfully.

Discuss truck farming and its advantages upon the Virginia coast.

Dairying and stock-farming for the Central portion.

Speak of the value of milk as a food; why under a dense population, milk and poultry must be used somewhat freely.

Why American butter does not take and hold the foreign market.

The importance of developing the dairy breed and of feeding for export beef.

Virginia,---4

Why Virginia should be the home of the high-bred horse and find abundant market in Europe and in the great cities.

The great advantages held by the hill regions and slopes of the Blue Ridge for fruit, especially the apple. Virginia ought to be able to supply European trade with enormous quantities. Lands not as well adapted to the growth of apples as Virginia lands bring in Colorado \$2,000 an acre in some instances.

Some difficulties in fruit industry. One is lack of quarantine and protection against insect pests. Another is the lack of adequate organization and the study of the fruit business in a thorough way, the same as it is done in California.

Become famous for having products of great excellence.

I assume that with these three great industries properly developed,- truck gardening, the stock and dairy interests, and the fruit interests, that such prosperity will come to the State of Virginia that the best of schools and the best of roads will follow as a matter of course.

Instead of the plan that I have outlined, Virginia has followed the unwise course of taking a line of farming with which she competes with the lowest civilization, and that

Virginia,---5

is tobacco.

With this improvement of farm conditions it is taken also for granted that the towns will do their part and instead of importing everything that is needed for use by the farmers they will manufacture the things that can be readily manufactured for the great advantage of the people, employing the population of these towns and cities and making them useful laborers, such as the making of wagons, the manufacture of the common cloth for clothing, the packing of the poultry and the swine, and other things that are necessary accompaniments of agriculture.

If these different lines be followed an attempt should be made to produce the best apples,- of the highest quality, of the best grade, of the best selection, with the best packing; butter and cheese and milk of the finest quality; horses of great excellence;- and do everything that shall attract and maintain the trade of the best portion of the world, because that is the only profitable trade.

Now, it may be said that you lack population to carry out this plan on any large scale. If so, the advantages of Virginia are so great,- in fact I may say so remarkable, that if they are properly advertized a stream of population will pour into Virginia that will make it rich in a few years.

Virginia,---6

Where to seek immigrants and how to obtain them.

Do not obtain them from Europe. Seek them in the states where lands are the highest in value - in the North Western States.

How to secure them,

1 - Get control of a sufficient body of land in several counties. Offer it at a low price and hold it at that for several years.

2 - This should not be the poorest. Secure a few reliable farmers from the section where you expect to get your immigrants.

3 - See that every settler is fairly treated and makes a good deal.

4 - Be social.

AGRICULTURAL DEVELOPMENT OF THE SOUTH CENTRAL STATES.

MR PRESIDENT:- FRIENDS AND INDUSTRIAL CO-LABORERS OF TEXAS:-

YOUR COMMITTEE HAS REQUESTED ME TO ADDRESS YOU UPON THE "AGRICULTURAL DEVELOPMENT OF THE SOUTH CENTRAL STATES," WHICH INCLUDES, AS I UNDERSTAND IT, A PRESENTATION OF THE MARVELOUS DEVELOPMENT OF A GRAND DIVISION OF THE UNITED STATES, THAT IS LARGER, MORE FERTILE, AND WITH GREATER MINERAL WEALTH THAN ALL THE KINGDOMS OF WESTERN EUROPE; AND THE TOPIC INCLUDES A DISCUSSION OF THE LINES ALONG WHICH FUTURE DEVELOPMENT SHOULD BE LAID TO FORTIFY AND PERPETUATE THESE COMMONWEALTHS IN A MANNER WORTHY OF THE HEROES WHO FOUNDED THEM.

IN THE DISCUSSION OF THIS TOPIC I SHALL LIMIT IT TO THE STATE OF TEXAS. THIS VAST REALM, ~~33~~ PER CENT LARGER THAN GERMANY, WITH VASTLY MORE ARABLE LAND, WATER AND SUNSHINE, -A SUBSTANTIAL BASIS FOR MARVELOUS PLANT PRODUCTION- HAS IN A WONDERFUL DEGREE ALL THE AGRICULTURAL RESOURCES, NECESSARY TO SUSTAIN A DENSE POPULATION.

THE GROWTH OF THIS GREAT STATE IN THE LAST DECADE IS EVIDENCE THAT THE WORLD HAS COMMENCED TO RECOGNIZE THE EXTRAORDINARY ADVANTAGES SHE OFFERS TO THE HUSBANDMAN. WITHIN THAT PERIOD THE NUMBER OF ACRES DEVOTED TO THE CEREALS WAS INCREASED ABOUT 56 PER CENT; THE INCREASE IN CORN AND OATS WAS ABOUT 60 PER CENT; IN WHEAT 300 PER CENT AND IN RICE 7000 PER CENT. IF SUCH HAS BEEN THE DEVELOPMENT IN 10 YEARS WHAT MAY WE NOT EXPECT IN THE SUBSEQUENT 30 years.

IN THE NORTH THE MOST FERTILE LANDS WERE SUCCESSIVELY OCCUPIED IN THE WESTWARD MARCH OF HOME SEEKERS UNTIL THEY CAMPED ~~ON~~ UPON THE SEMI-ARID SLOPES OF THE ROCKIES.

THIS EVER INCREASING ARMY OF EMIGRANTS HAS NOT BEEN DEFLECTED TO THE SOUTH AND MUST BE ADDED TO THE NATURAL INCREASE OF

Seaman A. Knapp,

Special Agent
U. S. Department
of Agriculture.



Lake Charles, La., _____, 190

POPULATION. THIS INVADING ARMY OF AGRICULTURE WILL BE RECRUITED BY THOUSANDS OF STURDY YOEMANRY FROM THE VARIOUS COUNTRIES OF EUROPE. THEY WILL NOT COME LIKE THE HOSTS OF ALARIC TO DEVASTATE, BUT THEY WILL COME WITH THE IMPLEMENTS OF TOIL TO UPBUILD, WITH THE OLIVE BRANCH IN TOKEN OF KINDLY CITIZENSHIP AND WITH THE NOBLE RESOLVE TO BE LOYAL TO THE INSTITUTIONS OF THE COUNTRY THEY ADOPT. WE MAY, THEREFORE, REASONABLY EXPECT THAT AT THE EXPIRATION OF THIRTY YEARS HENCE THE POPULATION OF TEXAS WILL BE FROM 9 TO 10 MILLIONS: HER BEST LANDS WILL BE FULLY OCCUPIED AND THRIVING VILLAGES WILL EVERY WHERE DOT THE RURAL LANDSCAPE. IN THE EARLY SETTLEMENT OF A COUNTRY CONDITIONS ARE PLASTIC; THERE IS A CERTAIN ELASTICITY TO THINGS. FARMERS CAN SELL THEIR LANDS AND BUY AGAIN: THEY CAN ABANDON AND RE-ESTABLISH: THERE ARE FEW GRADES IN SOCIETY: LIFE IS FREE AND EASY: IT IS BUT A STEP FROM POVERTY TO WEALTH.

NOT SO WHEN A COUNTRY IS FULLY SETTLED: FEW FARMS ARE FOR SALE: IT IS DIFFICULT TO ACQUIRE CHOICE TRACTS: SOCIETY IS RIGID: LIFE IS LIMITED MAINLY TO INHERITED LINES: THERE IS A VAST CHASM BETWEEN POVERTY AND WEALTH. THESE ARE NATURAL EVOLUTIONS AND MUST COME TO EVERY COMMONWEALTH SOONER OR LATER. IT IS SELDOM, HOWEVER, THAT THEY ALL COME WITH THAT STARTLING RAPIDITY WHICH THEY MUST COME TO TEXAS. FEW THINGS IN THIS WORLD ARE MORE ENDURING THAN THE CIVILIZATION OF A STATE. MANY OF OUR BEST COMMON LAWS AND POSSIBLY SOME OF OUR WORST, WERE PART OF THE CIVIC STRUCTURE OF OUR TEUTONIC ANCESTORS TWO THOUSAND YEARS AGO. THEY HAVE SURVIVED THE FIRES OF REVOLUTION, THE DECLINE OF STATES AND THE CRASH OF EMPIRES...

MEN OF TEXAS! YOU ARE MOLDING THE INSTITUTIONS OF A STATE DESTINED TO BECOME THE GREATEST OF THE FEDERAL UNION. YOU ARE SHAP-

ing conditions for the weal or woe of the millions; you are founding AN EMPIRE: YOU ARE MAKING HISTORY: YOU ARE READJUSTING THE MAP OF YOUR COUNTRY: YOU ARE MOLDING IMMORTAL INSTITUTIONS. WHAT LINES DO YOU PROPOSE TO PURSUE?

NO STATE CAN BE STRONGER THAN ITS WEAKEST POINT. THE WEAKEST PLACE IN THE ^{nations} STATES OF THE PAST WAS IN THE IGNORANCE OF THEIR RURAL POPULATION. THIS IS PROVEN BY OUR LANGUAGE. THE WORDS THAT STAND FOR AN IGNORANT OR DISREPUTABLE PERSON FORMALLY MEANT A FARMER. WE HAVE IN THE ENGLISH "HEATHEN", WHICH ^{once} FORMALLY SIGNIFIED A FARMER ON THE HEATH OR ENGLISH PRAIRIE. WE HAVE BORROWED FROM THE DUTCH THE WORD "BOOR", FROM THE DANES THE WORD "CLOWN" AND FROM THE LATINS THE WORD "VILLAIN". ALL MEANING FARMERS IN THEIR RESPECTIVE LANGUAGES.

IN THE COURSE OF HUMAN EVENTS THE VITAL FORCES ENGENDERED BY A COUNTRY LIFE MUST DOMINATE. IT WAS THE RURAL HORDES THAT OVERTHREW ROME. IT WAS MEN FROM THE COUNTRY THAT MADE CROMWELL'S ARMY INVINCIBLE. IT WAS THE COUNTRY BRED YOUTH THAT CARRIED THE STANDARDS OF NAPOLEON TO VICTORY. IT WAS THE YOEMENRY OF ENGLAND THAT WITHSTOOD THE CHARGE OF THE OLD GUARDS AT WATERLOO.

RECENTLY THE GOVERNOR OF A NEIGHBORING STATE CALLED OUT THE STATE GUARDS TO SUPPRESS A RIOT. THE CITY CONTINGENT WAS MARSHALLED BUT THE RIOT CONTINUED. THE COUNTRY BOYS ARRIVED AND IMMEDIATELY THE RIOTERS ASKED FOR TERMS. THEY KNEW THE COUNTRY BOYS WOULD SHOOT. THE COUNTRY BOY WILL SHOOT BULLETS IN WAR AND BALLOTS IN PEACE. ^{2/3 The Country in America will finally dominate the city what kind of} WITH A FAR-SIGHTED WISDOM THE UNITED STATES INAUGURATED ^{a Country boy are young to move} THE POLICY OF UP-BUILDING THE COUNTRY AND WIPING OUT THE STAIN OF IGNORANCE. AT FIRST THE ENTIRE CURRICULUM ~~WAS~~ FOR COUNTRY SCHOOLS

TENDED TO EDUCATE THEM AWAY FROM COUNTRY LIFE - TO MAKE PROFESSION-
 AL ^{MEN} OF COUNTRY BOYS-AND THEY MADE GOOD ONES,BUT THAT DIDI NOT DIRECT-
 ly build up the country. LATER A MORE RATIONAL SYSTEM OF BUILDING
 UP THE COUNTRY WAS FORMULATED-NAMELY,THAT THE EDUCATION GIVEN THE
 COUNTRY BOY SHOULD HAVE A DIRECT BEARING UPON COUNTRY LIFE. CHANGES
 ARE OF SLOW GROWTH. THE COUNTRY HAS NOW YET RECEIVED ITS FAIR AL-
 LOWANCE OF EDUCATIONAL PURPOSES. I DO NOT KNOW OF A STATE IN THE
 UNION WHICH DOES NOT DEVOTE VASTLY MORE MONEY TO THE EDUCATION OF
 PROFESSIONAL MEN THAN TO THE EDUCATION OF FARMERS.

WRONGS ARE SOMETIMES SELF CORRECTING. IF THESE UNBALANCE
 EDUCATIONAL CONDITIONS CONTINUE IT WILL SOON COME TO PASS IN THE
 UNITED STATES,AS IT HAS IN GERMANY AND JAPAN,THAT A PROFESSOR OF A
 CABBAGE PATCH CAN EARN MORE THAN A PROFESSOR IN A COLLEGE.

ALLOW ME TO OUTLINE SOME THINGS THAT SHOULD BE DONE FOR
 THE FARMER IMMEDIATELY.

1st. THE DOMAIN OF PRACTICAL KNOWLEDGE MUST BE ENLARGED. THE DIF-
 FERENCE BETWEEN THE AVERAGE PRODUCT OF WHEAT,CORN,AND COTTON PER
 ACRE IN A STATE AND THE LARGEST YIELD IS ABOUT FIVE ~~XXXXXXX~~ FOLD.
 THIS DIFFERENCE OF FIVE HUNDRED PER CENT AGAINST THE AVERAGE PLANTE
 ER IS DUE TO CONDITIONS WHICH HE CAN CONTROL,WITH THE REQUISITE
 KNOWLEDGE. THE DIFFERENCE BETWEEN THE AVERAGE COST OF AN ACRE OF
 WHEAT,CORN OR COTTON IS DOUBLE ITS MOST ECONOMICAL COST. WE HAVE
 THEREFORE BETWEEN THE AVERAGE AND THE BEST IN AGRICULTURE AN ATTAIN-
 ABLE THOUSAND PER CENT.

IN LEGITIMATE BANKING WE HAVE A POSSIBLE GAIN OF TEN PER
 CENT:IN MANUFACTURE,A POSSIBLE TWENTY PER CENT:IN MERCANTILE OPERATI
 TIONS,A POSSIBLE FIFTEEN PER CENT:YET THE BANKER,MANUFACTURER AND

THE MERCHANT ON AN AVERAGE ARE BETTER HOUSED AND BETTER CLOTHED AND HAVE MORE SURPLUS MONEY THAN THE PLANTER. THIS IS DUE TO THE REGULARITY OF THEIR GAINS. IS IT A MATTER OF LITTLE MOMENT THAT PROSPERITY SHOULD BE CONSTANT TO MILLIONS OF FARMERS?

BY A PROPER APPLICATION OF SCIENCE WE CAN BRING THE WORKING FORCES OF NATURE TO COOPERATE IN PRODUCTION, MAKING THE CROP UNIFORM IN QUALITY, SUCCESSIVE IN SEASONS AND ABUNDANT BEYOND CONCEPTION. SOILS MAY BE DEEPE^{ed}NED, AERATED AND FERTILIZED: EXCESSIVE MOISTURE REMOVED: PROTRACTIVE^{ed} DROUTH OBVIATED AND LUXURIANT HARVESTS ANNUALLY GARNERED.

WEALTH LIES IN THE UTILIZING OF WASTE. OUR CITY GAS WORKS WERE FREQUENTLY RUN AT A LOSS, TILL THE BY-PRODUCTS BECAME OF VALUE—COAL-TAR, NAPHTHA, CARBOLIC ACID, PARAFFINE AND THE ANILINE DYES. OUR CANNED MEAT INDUSTRY COULD NOT EXIST WERE IT NOT FOR THE PROFITS DERIVED FROM THE OFFAL IN LEATHER, CURLED-HAIR, COMBS, BUTTONS, BUTTER, GLUE, AND FERTILIZERS. IN THE WASTE OF THE FARM IS THE FORTUNE OF THE PLANTER. IF THE INSECTS AND THE HARMFUL SEEDS COULD BE CONVERTED INTO POULTRY AND EGGS: IF GRASSES COULD BE TURNED INTO BEEF, MUTTON AND WOOL: IF THE WASTE OF THE FOREST COULD ADD ITS CONTRIBUTION TO THE GENERAL GOOD: IF THE APPLE, THE PEACH, THE PEAR, THE PLUM, AND THE CHERRY COULD EVERY WHERE BE SUBSTITUTED FOR ROAD SIDE THICKETS, BRIAR PATCHES AND HILL SIDE COVERINGS, IT WOULD BE THE INAUGURATION OF THE MILLENIUM OF AGRICULTURE. APPLIED SCIENCE IS TO DISCOVER HOW THESE CAN BE PROFITABLY UTILIZED^{done}.

IN EVERY WAY THE DOMAIN OF PRACTICAL KNOWLEDGE MUST BE ENLARGED: EVERY RESEARCH IN THIS DIRECTION IS OF INFINITE VALUE. IT MAY NOT BE APPARENT NOW: ITS ULTIMATE VALUE MAY BE OBSCURE: THERE
MUS

MUST BE TOILERS UNDER THE SEA BEFORE THE CORAL ISLAND RISES FROM THE BOSOM OF THE WAVES AND IS COVERED WITH VERDURE FOR THE USE OF MAN.

THE EXTENSION OF INDUSTRIAL KNOWLEDGE IS NECESSARY, FOR ECONOMIC REASONS. ALL PRODUCTION IS DIRECTLY OR INDIRECTLY RELATED AND INTERDEPENDENT. THEY ^{are} HAVE A BROTHERHOOD, JUST AS HUMANITY IS ONE. EVERY PRODUCER IS A CONSUMER. ECONOMIC PRODUCTION IN A GIVEN DEPARTMENT IS BASED UPON MODERATE PRICES OF THE THING CONSUMED IF THE PRICE OF COAL OR OIL, BY A COMBINATION OF CAPITAL OR LABOR, SHOULD BE ADVANCED ONE DOLLAR IT WOULD INCREASE THE COST OF PRODUCTION OF NEARLY EVERY MANUFACTURED ARTICLE. IF THIS IS TRUE OF COAL ^{all} HOW DOUBLY TRUE IT IS OF FOOD PRODUCTS, EVERY AID TO ECONOMIC PRODUCTION AND DISTRIBUTION IS A GAIN TO ALL THE PEOPLE. IT IS AS IMPORTANT TO THE CITY CONSUMERS AS TO THE COUNTRY PRODUCERS.

THE FOLLOWING ARE SOME OF THE METHODS BY WHICH THE COST OF PRODUCTION CAN BE REDUCED - BETTER TILLAGE, THE USE OF BETTER TEAMS AND IMPLEMENTS, THE JUDICIOUS USE OF MANURES AND FERTILIZERS, MORE INTELLIGENT LABOR, GOOD STORAGE AND THE BEST HIGHWAYS. FARMERS DO NOT GENERALLY UNDERSTAND THE VALUE OF TILLAGE. YEARS AGO A FARMER'S SON ENTERED MY CLASS IN AGRICULTURE. UPON THE CALL OF HIS NAME HE SAID, "IT ^{is} WASTE OF TIME FOR ME TO STUDY AGRICULTURE, I WAS RAISED ON A FARM AND I KNOW ALL ABOUT FARMING." "YOU ARE JUST THE MAN I HAVE BEEN LOOKING FOR," I REPLIED, "AND I AM DELIGHTED TO HAVE FOUND SOME ONE WHO CAN ANSWER ALL MY QUESTIONS. LET US BEGIN WITH THE ALPHABET OF AGRICULTURE. WHY DO FARMERS PLOW LAND FOR A CROP?" "IT IS TO KILL WEEDS," HE REPLIED. "THEN IF THERE WERE NO WEEDS PLOWING WOULD BE UNNECESSARY, ACCORDING TO YOUR THEORY."

"I SUPPOSE THEY WOULD PLOW ANYWAY,BUT I DO NOT KNOW WHY,"HE REPLIED."

"NOW,MY YOUNG FRIEND,YOU SAID YOU KNEW ALL ABOUT FARMING, I COMMENCED WITH THE ALPHABET OF AGRICULTURE AND YOU DID NOT KNOW THE LETTER A."

this is precisely ^{the way} OF THE MASSES ON THE FARM SO FAR AS KNOWING WHY THEY DO CERTAIN THINGS. THEY MAY BE PRETTY GOOD FARMERS,BUT THEY DO NOT KNOW WHY. THEY INHERITED OR LEARNED FROM OBSERVATION SOME VERY USEFUL MOTIONS ON A FARM AND THEY FOUND THAT THESE MOTIONS UNDER FAVORABLE CONDITIONS WOULD PRODUCE A CROP. THEY DO NOT KNOW WHY. AMERICAN AGRICULTURE,FIGHTING FOR THE SUPREMACY OF THE WORLD,DEMANDS THE REASON, THEN WE CAN INTELLIGENTLY MODIFY TO MEET NEW CONDITIONS.

PLOWING MIXES THE SOIL AND AIDS IN THE GERMINATION AND DESTRUCTION OF WEEDS. IT DOES MORE:IT PULVERIZES AND AERATES THE SOIL, SO THE SUNSHINE AND THE AIR CAN PENETRATE IT AND MANUFACTURE FOOD FOR PLANTS. SEVERAL PLOWINGS ARE EQUAL TO A DRESSING OF MANURE. THEY DRAIN THE SURFACE AND ENABLE THE SOIL TO ABSORB AND RETAIN MORE MOISTURE IT IS CLAIMED THAT SOIL THOROUGHLY PULVERIZED 15 INCHES DEEP WILL PRODUCE A CROP OF CORN WITHOUT A DROP OF RAIN FROM PLANTING TO HARVEST.

IN OUR UNFROSTED LANDS DEEPER AND MORE FREQUENT PLOWING IS ESSENTIAL TO LARGER CROPS. IN INDIA THEY PLOW SIX TIMES AND IN DENMARK SEVEN TIMES FOR EACH CROP. IF WE ARE TO DO MORE PLOWING AND DEEPER PLOWING,MORE CULTIVATION AND BETTER CULTIVATION, THEN WE MUST HAVE STRONGER TEAMS AND ANIMALS BRED TO A FASTER WALK. WAGES ARE ADVANCING. THEY CAN BE REDUCED BY REQUIRING EACH MAN TO DRIVE MORE MULES AND PLOW MORE LAND PER DAY. THE ONE MULE AND THE TWO MULE TEAMS ARE PASSING: THE FOUR,SIX,XX OR EIGHT MULE TEAMS ARE NOW SKILLFULLY HANDLED BY ONE DRIVER. THEY MUST BE FASTER WALKERS. THE $2\frac{1}{2}$ MILE GAIT IS TOO SLOW FOR THIS AGE WHEN ANIMALS CAN BE FOUND THAT ARE BRED TO A 5 MILE WALKING GAIT. THE DIFFER-

ENCE BETWEEN THE ONE MULE FARMER WITH THE $2\frac{1}{2}$ MILE GAIT AND THE FOUR MULE FARMER WITH THE FAST WALK IS THE DIFFERENCE BETWEEN POVERTY AND AFFLUENCE. THE VALUE OF HIGH BRED SEED IS NOT APPRECIATED. A SEED IS AS FULL OF PECULIARTIES AS A TRICK MULE IS OF UNCERTAINTIES. THE GERMINAL force, THE CHARACTER OF THE PLANT AND THE ULTIMATE VALUE OF THE CROP ARE IN THE MINUTE GERM AND IT IS IMPOSSIBLE TO SECURE A HIGH BRED, PERFECT CROP FROM A LOW BRED, IMPERFECT SEED.

BUT A SMALL PER CENT OF THE PEOPLE OF THE WORLD UNDERSTAND THE VALUE OF MANURES AND FERTILIZERS. SOMETHING IS GENERALLY KNOWN ABOUT THE EFFECT OF ANIMAL MANURE, BUT THE USE OF COMMERCIAL FERTILIZERS AND GREEN CROPS FOR MANURE IS BUT LITTLE UNDERSTOOD AMONG THE MOST ENLIGHTENED NATIONS AND PRACTICALLY UNKNOWN AMONG THE REMAINDER. IN INDIA AND CHINA I COULD NOT LEARN THAT GREEN CROPS WERE EVER PLOWED UNDER BY FARMERS FOR MANURE, AND COMMERCIAL FERTILIZERS WERE NEVER USED BY THE NATIVES. IN THE SKILLFUL AND ECONOMIC USE OF THESE MANURES AND FERTILIZERS LIES ONE OF AMERICA'S GREAT OPPORTUNITIES TO DOMINATE THE AGRICULTURAL MARKETS OF THE WORLD.

IT IS EVIDENT FROM THESE STATEMENTS THAT WE MUST HAVE MORE INTELLIGENT LABOR. THE FUTURE GREAT WARS OF THE WORLD WILL BE WARS FOR INDUSTRIAL SUPREMACY. AGRICULTURE HOLDS THE CENTER OF THE INDUSTRIAL ARMY: AGAINST THIS POINT THE WORLD'S FORCES OF CHEAP LABOR AND CHEAP TRANSPORTATION WILL BE CONCENTRATED. WE MUST MEET IGNORANCE WITH KNOWLEDGE, NUMBERS WITH SCIENCE, CHEAP TRANSPORTATION BY MORE ECONOMIC PRODUCTION AND LOW PRICED LABOR BY SUPERIOR SKILL AND THE USE OF MACHINERY. ONE OF THE MOST IMPORTANT REQUISITES FOR ECONOMIC PRODUCTION IS SKILLED, INDUSTRIOUS, AND CONSCIENTIOUS LABOR AT A MODERATE PRICE. POLITICAL ECONOMY TELLS US THAT LABOR ULTIMATELY DETERMINES THE COST OF

10 1/2 Let us bring some direct facts to bear on the good roads problem. It costs on an average 25 cents to haul a ton one mile on a common earth road in the United States as determined by the Government Department of Agriculture, while the cost by rail is less than 3/4 of a cent per ton (7.2 mills) and by water less than 1/4 of a cent (2.4 mills) and on the great lakes less than 1/10 of a cent. On such roads as the Romans built or such as the Spaniards constructed in Porto Rico farm products can be transported by wagon at 4 cents a ton per mile. By actual test on a stone road, with low grades and no ruts, four times the load can be hauled by a given team that can be hauled on ~~an~~ earth roads under average conditions, and fifty per cent greater distance traveled; so that a team can do 8 times the work on a good ^{road} ~~road~~ that it can do ~~on~~ ^{on} average country roads.

How much does this mean to the farmers? In 1902 the rail roads of the United States moved 1,084,066,451 tons of freight. Very little of this but was moved on a farm wagon either at its origin or at its destination.

Allowing over one fifth of the total for

10 $\frac{3}{4}$ Such as was not, and it leaves ^{25,900,000} 25,900,000 tons for the amount hauled by trains. If we allow five miles as the average distance such freight was transported by wagon and place the saving made by good roads at 21 cents per ton for each mile we find the farmers would save \$945,000,000 annually by the good roads. This makes no allowance for the hay, grain, wood & other products of the farm & forest ~~also~~ hauled to city and town and city ~~and are~~ ^{for their use} ~~and are~~ ^{that} not delivered to the rail road. If we allow 10,000,000 per mile for constructing such roads as France or England has, the above annual loss by reason of bad roads would construct 95,500 miles annually. But a fraction of this amount would construct roads fairly good and at all times possible.

EVERY PRODUCT: THEREFORE, IN DISCUSSING ECONOMIC PRODUCTION, LABOR IS THE MOST IMPORTANT ELEMENT.

SKILL IS THE RESULT OF INTELLIGENCE AND PRACTICE. THE MAN NOT TRAINED TO THINK, TO OBSERVE CAREFULLY, TO REMEMBER, TO REFLECT AND TO REASON CANNOT ATTAIN GREAT SKILL, EXCEPT THE WORK BE SUBDIVIDED AND LIMITED TO THE CAPACITY OF HIS BRAIN, AS IN THE LARGE MANUFACTURING ESTABLISHMENTS. THIS CANNOT BE DONE IN AGRICULTURE. LABOR IS SCATTERED OVER THE FARM AND IF UNSKILLED IT BECOMES ENORMOUSLY EXPENSIVE, BY REASON OF MISDIRECTED ENERGY, LACK OF JUDGEMENT AND COST OF SUPERINTENDENCE. TO AN INDUSTRIALLY TRAINED MAN SKILL IS ALMOST AN INTUITION. IT DOES NOT GO THROUGH A SLOW PROCESS OF MENTAL REASONING. THE EYE GRASPS THE OBJECT LESSON, THE MEMORY RETAINS IT AND THE HAND IS TRAINED TO EXECUTE. THIS VIGILANT EYE ENABLES HIM TO OBSERVE THE SHORT WAY OF DOING THINGS.

WE NEED AN INDUSTRY WHICH CROWDS THE WORK ALL DAY WITH THE TIRELESS ENERGY OF THE THOROUGHbred AND AN ABSOLUTE FAITHFULNESS IN DETAILS. THE GREATEST OBSTACLE TO THE PROFIT AND PROGRESS OF SOUTHERN AGRICULTURE IS THE ABSENCE OF THESE REQUISITES IN THE NEGRO. THOUSANDS OF MEN IN EVERY WALK IN LIFE WOULD ENJOY OWNING A FARM AS A RELAXATION FROM THE TENTIONS OF PROFESSIONAL OR BUSINESS LIFE, BUT SUCCESSFUL MANAGEMENT AND FAITHFUL LABOR CAN RARELY BE HIRED.

EVERY REMEDY IS PRESCRIBED FOR THE ILLS OF WORKMEN, BUT THE ONE WHICH IS CONCPICIOUS BY ITS ^{ordinary} ~~UNIVERSAL~~ ABSENCE- ONE, HOWEVER, THAT IS WITHIN THE POSSIBLE ATTAINMENT OF EVERY INDIVIDUAL, TO-WIT: MORE SKILL, HIGHER INTELLIGENCE, AND GREATER FAITHFULNESS. THESE ATTAINMENTS ARE SO RARE THAT THEY COMMAND A ^{MA} EXTRAVAGANT PRICE. THEY MUST BECOME COMMON AND CHEAP BEFORE THE UNITED STATES CAN COMPETE SUCCESSFULLY IN ALL LINES OF AGRICULTURE WITH THE OLD WORLD.

AS I HAVE TRAVELLED THROUGH YOUR BEAUTIFUL STATE AND NOTED YOUR FERTILE LANDS I HAVE ALSO OBSERVED ON EVERY HAND GREAT WASTE - MACHINERY UN~~U~~^Z HOUSED, STRAW STACKS UNCOVERED, GRAIN SOME TIMES ROTTING IN THE FIELD, ANIMALS NEGLECTED AND TIMBER WANTONLY CUT. BETTER SHELTER AND MORE STORE HOUSES MUST BE PROVIDED, UNIVERSAL WASTE MUST CEASE. I HAVE SAID AND I HERE REPEAT, "THERE ARE THREE THINGS NO FARMER WHO LOVES HIS COUNTRY AND HIS RACE HAS A RIGHT TO DO - TO FAIL TO USE EVERY OPPORTUNITY WITHIN HIS REACH TO IMPROVE HIMSELF AND HIS FAMILY MORALLY AND INTELLECTUALLY - TO LEAVE THE COMMUNITY AND THE STATE IN WHICH HIS LOT IS CAST THE WORSE FOR HIS LIVING- TO ROB HIS FARM OF ~~XXX~~ ITS STORED WEALTH AND LEAVE IT LESS PRODUCTIVE THAN HE FOUND IT.

ANOTHER MOST IMPORTANT MEANS OF AIDING THE COUNTRY IS BY THE CONSTRUCTING OF GOOD ROADS. A HIGHLY CIVILIZED PEOPLE WITHOUT ROADS & IS AN INCONGRUITY. DO WE WONDER THAT PEOPLE ABANDON THE COUNTRY FOR THE TOWN, THAT IN MANY ~~SEEM~~ SECTIONS FARMERS ARE DEPRESSED AND AGRICULTURE UNPROFITABLE? IT COSTS AS MUCH TO TRANSPORT THIRTY BUSHELS OF WHEAT TWENTY MILES TO THE NEAREST STATION ON A FARM WAGON AS TO PAY THE FREIGHT FROM CHICAGO TO NEW YORK.

IF A MAN HAS AN OFFICE IN TOWN, TO RESIDE TWO MILES IN THE COUNTRY IS A LONG WAY OUT. OUR SO-CALLED ROADS, BY WHAT THEY DO NOT PROVIDE, ARE A TAX ON THE PLANTER GREATER THAN THE TAXES OF COUNTY AND STATE AND THE DUTIES OF THE AMERICAN TARIFF. ALL TAXES BRING SOME RETURNS. THE RETURNS OF POOR ROADS ARE CRIPPLED HORSES, BROKEN WAGONS, DELAYED BUSINESS AND BANKRUPT PLANTATIONS. *Insert page 10 1/2 10 3/4*

WITH SUCH ROADS AS ENGLAND AND FRANCE AFFORD, TRANSPORTATION WITHIN DISTANCES NOT EXCEEDING ~~20 OR 50~~ MILES IS CHEAPER BY WAGON THAN BY RAIL AND A RESIDENCE TEN MILES IN THE COUNTRY IS A MORNING AND AN

EVENING PLEASURE. GOOD ROADS ARE FUNDIMENTAL TO COUNTRY BUSINESS, PROSPERITY AND POPULATION. I MEAN BY GOOD ROADS A THOROUGHLY CONSTRUCTED TURNPIKE OF STONE OR GRAVEL. CAN WE BUILD THEM? IF WE WILL WE CAN. MEET AND RESOLVE: HOLD CONVENTIONS: WRITE ~~IT~~ IN STATE AND NATIONAL PLATFORMS: CREATE THE SENTIMENT: MAKE THE LAWS: HAUL OUT THE DENIZENS OF THE POOR HOUSE; THE JAIL AND THE PRISONS; CHARTER THE GOSSIP-PORTER AND THE STORY-SWAPPER: CALL IT A WAR MEASURE: ENLIST THE ARMIES OF THE IDLE: UTILIZE THE COMMONWEALTH FOR THE PUBLIC GOOD: USE THE HIGHER POWERS OF THE GOVERNMENT: ISSUE BONDS AND CONSCRIPT MEN. IT MUST BE DONE. THE PLANTER NEEDS TO REDUCE THE COST OF TRANSPORTATION: THE LABORER TO PROVIDE ^{COUNTRY} HOMES AND CHEAPER LIVING: THE MERCHANT WANTS THE COUNTRY AIR. WHAT OPPOSES? ROADS → BAD ROADS.

AN ADDITIONAL BUT IMPERATIVE ^{reason} WHY SPECIAL ATTENTION SHOULD BE GIVEN TO THE CONSTRUCTION OF GOOD COUNTRY ROADS NOW, IS THAT ELECTRICITY HAS GIVEN US A NEW MOTOR POWER THROUGH THE STORAGE BATTERY. THIS HAS BEEN ATTACHED TO THE FARM WAGON AND PRODUCE CAN BE CONVEYED OVER GOOD COUNTRY ROADS AT A SPEED OF TEN TO FIFTEEN MILES PER HOUR. THIS ENABLES THE FARMER TO CHOOSE HIS MARKET POINT. HE CAN GO ~~AN~~ HUNDRED MILES IF NECESSARY TO SECURE BETTER RETURNS. THE FARM WAGON IS MORE ECONOMICAL THAN THE CAR BEING CHEAPER AND LIGHTER IN PROPORTION TO THE ^{weight} ~~RATE~~ IT CARRIES.

THIS IS NO UTOPIA: EVERYTHING IS READY FOR THIS REVOLUTION EXCEPT THE ROADS.

IT IS MORE THAN 280 YEARS SINCE THE EXPERIMENT OF AMERICAN FARMING WAS COMMENCED BY SOME OF THE MOST ENLIGHTENED PEOPLE OF EUROPE. WITH WHAT RESULT? DURING THIS LONG PERIOD THE ROADS HAVE NOT IN GENERAL IMPROVED: THE AVERAGE ^a FARM HOUSE IS WITHOUT ARCHITECTURE OR COMFORT

AND ITS ENVIRONMENT WITHOUT FLOWERS OR LANDSCAPE: THE PATCH WORK FARM GRIMLY WATCHES A CONTEST BETWEEN THE MAN AND THE BRIER, WITH THE CHANCES IN FAVOR OF THE BRIER.

IN PORTIONS OF THE COUNTRY THERE ARE VASTLY MORE MORTGAGES ON THE FARMS, MORE PATCHES ON THE TROUSERS, MORE ELBOWS TO THE WEATHER, AND MORE SORE PLACES IN THE HEART THAN OUGHT TO BE IN A FREE COUNTRY.

WHEN A COMMUNITY HAS BEEN AROUSED TO THE NECESSITY OF GOOD ROADS A COMMON ERROR IS TO TRY TO CONSTRUCT ALL THE ROADS AT ONCE, WHICH IS A CERTAIN FAILURE. A FEW THOROUGHLY CONSTRUCTED ROADS WILL INSURE THE REMAINDER..

IT IS ALL IMPORTANT THAT THE PROGRESSIVE FARMER SHOULD BE ABLE AT ALL TIMES TO RECOGNIZE HIS FRIENDS AND HIS ENEMIES IN THE VEGETABLE AND THE ANIMAL KINGDOM. THE GERMS, THE FUNGI, THE ANIMALCULI, THE INSECTS, THE REPTILES, THE MAMMALS, AND THE BIRDS THAT ARE HELPFUL TO AGRICULTURE AND THOSE THAT ARE ITS FOES, OR HE MAY DESTROY HIS FRIENDS AND PROTECT HIS ENEMIES.

TEXAS IN THE PAST HAS BEEN FREEMINENTLY THE STATE OF LARGE ~~EX~~ PLANTERS AND RANCHMEN, WHO COULD AFFORD TO RESIDE IN THE VILLAGES OR ~~XXX~~ CITIES AND USE THEIR RURAL DOMAIN FOR THE PRODUCTION OF COTTON, CORN AND CATTLE. THE UPBUILDING ^{of the country} WAS NOT A NECESSITY. A CHANGE HAS COME AND THE FORCE OF CONDITIONS COMPELS TO SOME EXTENT THE BREAKING UP OF LARGE ESTATES, ~~THE~~ THE PERMANENT SETTLEMENT OF THE COUNTRY. IF THE COUNTRY IS TO BE FULLY SETTLED I APPREHEND THE GREAT STATE OF TEXAS WANTS THE BEST SETTLERS, MEN WHO APPRECIATE THE COMFORTS AND CONVENIENCES OF MODERN CIVILIZATION AND WILL HAVE THEM. THEY WILL HAVE ATTRACTIVE HOMES, GOOD COUNTRY SCHOOLS, RURAL MAIL DELIVERY, FARM TELEPHONES AND RAPID TRANSIT BY THE AUTOMOBILE OVER GOOD COUNTRY ROADS. IS THERE ANY JUST

reason why the cities should have these things and the country be deprived of them? SOME ONE TELL ME THE COUNTRY CANNOT AFFORD IT. THEN IT IS BECAUSE THE COUNTRY HAS BEEN DEPRIVED OF ITS JUST PROPORTION OF THE PRODUCTIVE ENERGIES OF THE SOIL. IS IT TRUE? WHO ULTIMATELY PAYS FOR BUILDING, EQUIPING AND RUNNING THESE MAGNIFICENT LINES OF RAILWAY? THE FARMER. IF THE FARMER CAN AFFORD THE COSTLY RAILWAY CAN HE NOT BETTER AFFORD THE LESS EXPENSIVE HIGHWAY? THE FARMERS WIFE IS NOT GOING TO SUBMIT TO LIVE IN A HOVEL WHILE HER SISTER WHO MARRIED THE CITY GROCER LIVES IN A PALACE. SHE LOVES FLOWERS AND SHE IS GOING TO HAVE THEM. THE FARMERS WIFE HAS JUST AS LONG A TONGUE AS HER SISTER THAT MARRIED THE CITY BANKER AND SHE WANTS TO USE IT BY TALKING OVER THE WIRES. THE WORLD IS GOING TO GIVE HER A CHANCE. THE FARMER IS GOING TO PAY FOR THESE THINGS BY EARNING MORE MONEY. HE WILL USE STRONGER AND FASTER TEAMS, BETTER SEEDS AND IMPLEMENTS, ACCOMPLISH VASTLY MORE WORK AND HE WILL KILL HIS ENEMIES INSTEAD OF HIS FRIENDS ON THE FARM AND IN THE POLITICAL FIELD. THE PROGRESSIVE, UP-TO-DATE FARMER BY THE AID OF MODERN APPLIANCES CAN DO TEN TIMES THE WORK OF HIS GRAND-FATHER AND ^{will} REAP TEN TIMES THE PROFITS. *Rice China & Japan*

THE TIME IS RIPE FOR A CHANGE IN AGRICULTURAL PROSPERITY. AN EXAMINATION OF THE LAST CENSUS WILL SHOW THAT THE STAPLE ARTICLES ^{we} PRODUCE UPON THE FARM BRING MORE IN THE MARKETS OF THE WORLD THAN THEY DID FIFTY YEARS AGO: FOR EXAMPLE, COTTON, CORN, RICE, BUTTER, CHEESE, LARD, FAT-HOGS AND CATTLE, WHILE THE STAPLES WE MUST PURCHASE FOR THE FARM ^{are lower} BRING LESS - SUCH AS NAILS, IRON, MATERIAL FOR CLOTHING, FLOUR, COFFEE, SPICE, STARCH, SUGAR, ETC. RAILROADS HAVE BROUGHT TRANSPORTATION WITHIN REACH AND WE CAN NOW UTILIZE THE FORMER WASTE OF THE FARM.

TO ACCOMPLISH ALL THIS REQUIRES THE GENERAL DIFFUSION OF KNOW-

14 One of the great aids to country
development ~~would be~~ ^{is} a State Department
of Agriculture. There is a vast amount
of ^{practical} information about farming among
the farmers, but it requires State organiz-
-ation to collect and disseminate it.

Farmers want facts about lands, soils,
irrigation, ^{seeds,} plants, ^{fertilizers,} roads, markets
and hundreds of subjects an energetic
Commissioner of Agriculture can supply.

ledge AMONG THE FARMERS. HOW SHALL IT BE DONE? THE AGRICULTURAL AND MECHANICAL COLLEGES AND THE EXPERIMENT STATIONS HAVE DONE A GREAT WORK IN UPLIFTING THE COUNTRY. THEY HAVE DONE ALL THEY COULD WITH THE MEANS AT THEIR COMMAND AND THEY WOULD DO VASTLY MORE HAD THEY MORE MEANS. BUT TO DEPEND UPON A SINGLE AGRICULTURAL COLLEGE TO *do* ENLIGHTEN THE EMPIRE OF TEXAS IS ABOUT AS RATIONAL AS IT WOULD BE TO PLACE AN *great* ARC LIGHT, FIVE HUNDRED FEET HIGH, IN THE CENTER OF TEXAS, TO GIVE LIGHT TO ALL HER CITIES. THERE MUST BE SUB-EXPERIMENT STATIONS and the common schools AND ACADEMIES MUST SUPPLEMENT THE GREAT WORK OF YOUR *industrial* COLLEGE.

AFTER ALL THIS IS ONLY FOR THE YOUTH. WHAT IS TO BE DONE FOR THE FARMERS IN THEIR REMOTE HOMES? THEY NEED HELP AND NEED IT NOW. ENVIRONMENT IS A MIGHTY FORCE. IN HONGKONG I BECAME ACQUAINTED WITH CHIN, WHO LIVED IN THE UNITED STATES TEN YEARS, WAS AN HONORED GRADUATE OF YALE AND ADOPTED AMERICAN USAGES. HE RETURNED TO CHINA MARRIED A CHINESE GIRL AND LIVES LIKE ALL MONGOLIANS. UNLESS WE CHANGE FARM ENVIRONMENT MUCH OF THE GOOD WORK OF OUR COLLEGES WILL BE LOST.

FURTHER, THE MEN NOW ON THE FARMS NEED HELP. THE GREAT OCEAN LINERS HAVE REDUCED THE EXPANSE OF THE SEAS AND OCEANS TO ONE-FIFTH THEIR FORMER AREA: ALL NATIONS ARE WITHIN TALKING DISTANCE: THERE IS ONLY ONE WAY TO PREVENT THE OVERTHROW OF OUR INDUSTRIAL FABRIC AND THAT IS BY THE DIFFUSION OF KNOWLEDGE.

THIS CAN BE DONE MORE EFFECTIVELY BY FARMERS INSTITUTES THAN IN ANY OTHER WAY YET DEVISED. A SERIES OF SUCH INSTITUTES IN EVERY COUNTY IN THE STATE WILL AROUSE THE FARMERS TO ACTION AND ACCOMPLISH MORE GOOD WITH LESS MONEY THAN IN ANY OTHER WAY. THE INSTITUTE IS A

traveling school OF INFORMATION AND EXPERIANCE THAT WILL AROUSE COURAGE AND INFUSE HOPE ALL OVER THE STATE. TEXAS HAS HAD A FAIR PROPORTION OF ILLUSTRIOUS MEN AND CIVIC HEROES, BUT I KNOW OF NONE MORE WORTHY OF MONUMENTAL FAME THAN THE CAPTAINS OF INDUSTRY WHO INAUGURATED THE FARMERS INSTITUTES.

ALMOST UNAIDED THEY LEFT THEIR HOMES AND THEIR BUSINESS TO LIGHT THE BEACON FIRES WHICH CALL THE PEOPLE TO INDUSTRIAL BATTLE. THE CLANSMEN IN THEIR PLAIDS ARE GATHERING, NOT WITH SPEAR AND BATTLE AXE, BUT WITH ENFIELD AND MAUSER TO DO BATTLE FOR A HIGHER, MORE INTELLIGENT AND MORE COMFORTABLE COUNTRY LIFE. THEY HAVE BEEN PAYING FOR INCREASED FACILITIES AND INCREASED ENLIGHTENMENT IN STATE AND NATION; now they have raised the pertinent ~~question~~ inquiry "where do WE COME IN?"

THIS CRY WILL NOT CEASE UNTIL EVERY FARM HOUSE IN THE BROAD LAND IS UNITED BY A HIGHWAY SO WELL CONSTRUCTED THAT THE COMMON WAGON IS EQUAL WITHIN THE LIMIT OF ITS WORK TO THE EXCLUSIVE CAR: UNTIL OUR WORKSHOPS ARE SUPPLIED WITH SUCH MARVELOUS MACHINERY, HANDLED WITH SUCH SKILL AND ECONOMY THAT IN EVERY INDUSTRY WE SHALL NOT ONLY SUPPLY THE WANTS OF OUR OWN PEOPLE, BUT WE SHALL SUCCESSFULLY INVADE EVERY MARKET OF THE WORLD: UNTIL EVERY WAGE EARNER SHALL BE A SKILLED CRAFTSMAN AND A FREEMAN IN HIS OWN HOME, AND FEEL A YOEMAN'S PRIDE WITH A YOEMAN'S PRIVILEGES: UNTIL EVERY FARMER AND PLANTER SHALL BE SO WELL INSTRUCTED THAT HE WILL MOULD THE SOIL TO HIS PROFIT AND THE SEASONS TO HIS PLANS, TILL HE SHALL BE FREE FROM THE VASSALAGE OF MORTGAGE AND THE BONDAGE OF DEBT AND BECOME A TOILER FOR PLEASURE, FOR HOME, FOR KNOWLEDGE AND FOR COUNTRY: UNTIL CAPITAL AND LABOR SHALL UNITE UNDER THE LEADERSHIP OF KNOWLEDGE AND EQUITABLY DIVIDE

THE INCREMENT OF GAIN. THEIR MISSION IS TO SOLVE THE PROBLEMS OF POVERTY, TO INCREASE THE MEASURES OF HAPPINESS AND, TO THE UNIVERSAL LOVE OF COUNTRY ADD THE UNIVERSAL ~~KNOW~~ KNOWLEDGE OF COMFORT, AND TO HARNESS THE FORCES OF ALL LEARNING TO THE USEFUL AND THE NEEDFUL IN HUMAN SOCIETY. *in Country life*

Much of the so called progress is illusory. Men have tried to build 3 or 4th stories without building the 1st & 2^d. The first story of industrial progress is agriculture and the 2^d is ^{the} mechanic arts. Higher stories built without these are structures ^{suspended} ~~hanging~~ in air.

In China are two provinces, Honan and Hunan. The Chinese are accustomed to say of the men of Hunan; "The ^{Men of Honan} ~~are~~ men of straw. The men of Hunan are men of granite. The people of both provinces are of the same race; the difference is one of education and training.

Nancy Texes; You have it in your power to make the future Texes men of straw or men of granite.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,

B. T. GALLOWAY, CHIEF.

SEED AND PLANT INTRODUCTION
AND DISTRIBUTION.

A. J. PIETERS,
BOTANIST IN CHARGE.

S. A. KNAPP,
SPECIAL AGENT.

REPORT OF DEMONSTRATION FARM.

JEWELLA, LA., _____, 190 .

1. State in this report the work that has been done on the farm during the week. In case of plowing state the number of acres plowed, the depth plowed, and whether disked and harrowed; i. e., give all material facts. If you worked at building fence do the same thing. It is not sufficient to simply say "Built fence, so many days." You should state the kind of fence and all particulars.

2. Give the conditions of the growing crops, especially the stand, the vigor, and the height of each crop.

3. Miscellaneous.

(Signature)

5 teach how to turn out at four
in the morning and drive business
relentlessly till the dusk calls
to rest. The most failures

in farming are on the business
side and not on the scientific
side. In the past three years I
have been in close touch with
over ten thousand ^{of the best} successful
farmers and know the causes
of their successes ~~or failures~~ on

the farm. The ~~totally~~ ^{superior & successful} ~~business~~
farmers ^{are almost} ~~universally~~ ^{generally} ~~graduates~~ ^{of the} ~~common~~
schools. I do not recall a single
graduate of an agricultural college
or a University in the first rank

The thoroughly trained business man
with tireless energy and habits of order
and thrift, who has been raised on the
farm, can upon return to it acquire
the sciences applicable to his profession
much more readily than the college
trained man versed in science can
master the business side of agriculture.

Do not misunderstand me as belittling
the sciences or attempting to dwarf the
advantages of a college education.
I am speaking only of the

6 relative advantages of ~~a~~ business
habits and training and habits, and
compared with
Scientific knowledge in procuring
Success upon the farm.

The average farmer does not
keep any ^{book} account with his crops
and does not know exactly where
to place his losses or gains. In our
cooperative demonstration work we
require detailed crop accounts.

In the Fall of 1905 one of our
Cooperative farmers came to our
Houston office greatly perplexed.
He said to our traveling agent
for his district, "I want you to
go over my figures on my cotton
crop. They show that I have cleared
19.50 per acre above all costs.
This is impossible. There must
be some mistake." When our agent
had gone over the computation and
assured ^{him} it was correct, he seemed
greatly excited and said, "Well! I am
an idiot. I know I had made some
money but I did not know just what
crop made it. For two years I have
been offered a quarter section of ^{prairie} land

7. ^{for 1000 per acre.} adjoining my farm. Every acre of
that land will produce a bale of cotton
annually and I could pay for the farm
out of the first crop and have money
left. Why haven't I done it? Because
I ~~didn't~~ not know how to figure.

You have taught me and now
I will buy. Do you suppose that
farm will be sold before I can get
home? - and he walked the floor
in nervous anxiety till the train time.

Today he owns the farm and paid
for it - out of the profits on this season's
cotton crop.

The most gratifying
feature of our Farmers Cooperative
Farm Demonstration work is that
^{large earners upon the farm}
~~employees~~ have become scarce - Farm
laborers are demanding a share of
the crop and the share workers are
~~now~~ quite generally buying farms
and paying cash prices.

This learning agriculture - which
is a compound of the following ingredients
- $\frac{1}{8}$ science, $\frac{3}{8}$ art and $\frac{1}{2}$ business methods
- out of a book, is like reading up on the
handsaw and jack plane and hiring
out for a carpenter.

It may be improved because

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF STATISTICS.

OFFICE OF THE STATE STATISTICAL AGENT.

There are what their
mothers meet them

(Preservation, Emerson)
What good honest gentlemen

men at home, will be
wolves & goats on changing -

The pathetic, for pathetic

is the region of affection
and its affairs there always

lie to our eyes -
what is game as played with us

we must play no game with ourselves
but close in our journey with

the best honesty & truth

Philosophy of the Persian
Cooled there must I be though
wisest of the wise
Then be the fool of virtue not
of vice

Will not one of heaven's delights be
to see the "inaccessible light"

which God - our Lord - is
shrouded and to behold one another
faces in the light of the Lamb?

My new Curate A Story

Gathered from the stray leaves
of an Old Diary by Sheehan,

One of those little side-scenes in the
drama of existence which God turns
suddenly to the front lest we should ever
mistake the fact that our little world
is a stage and that we have all
the denizens of the veiled eternities
for our audience.

MAY

STATE CORRESPONDENT'S SCHEDULE.

To be mailed to State Statistical Agent April 30, 1904.

U. S. Department of Agriculture,
BUREAU OF STATISTICS.

WASHINGTON, D. C., April 1, 1904.

TO CORRESPONDENTS:

Before answering the first question you are requested to read carefully Note 1 on the other side of this schedule.

The condition of winter wheat, winter rye, meadow mowing lands, and spring pastures is asked for in the form of a percentage as compared with a normal growth and vitality, unimpaired by unfavorable weather, prevalence of insects, or any other damaging agency; the normal condition being represented by 100.

The last question requires the percentage of spring plowing already done.

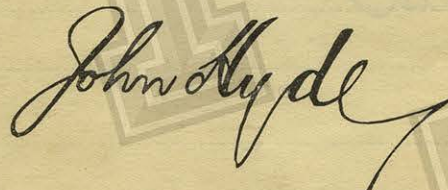
For further information see **CROP REPORTER** for April.

Use the schedule only for the report. Make all other communications on a separate sheet of paper, dated, giving *county*, State, and post-office; and when the post-office is not in the county for which the report is made, the fact should be stated. Sign all communications plainly.

This schedule should not be forwarded to the Department, but to the State Statistical Agent.

It is important that correspondents mail their reports to the State Statistical Agent as nearly as possible upon the day indicated, as tabulations are made from them for publication, and the State Agent's report can not be delayed for those which are not promptly returned.

Respectfully,



Statistician and Chief of Bureau.

[OVER.]

MAY

STATE CORRESPONDENT'S SCHEDULE.

To be mailed to State Statistical Agent April 30, 1904.

[SEE INSTRUCTIONS ON THE OTHER SIDE.]

Winter wheat.		Winter rye.	Meadow mowing lands.	Spring pasture.	Spring plowing.
What portion of the area sown last fall will not be harvested? (See note 1 below.)	Condition—Normal growth and vitality being represented by 100. (See note 2 below.)	Condition—Normal growth and vitality being represented by 100.	Condition—Normal growth and vitality being represented by 100.	Condition—Normal growth and vitality being represented by 100.	What portion of this work is already done?
Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.

NOTE 1.—The first inquiry calls for the portion of the area sown in winter wheat last fall which, from present indications, will not be harvested. This should include the area winter killed, cut for forage, pastured, plowed up, sown to other crops—in fact, all that, for any reason whatever, has been or will be abandoned. The area so abandoned should be expressed in the form of a percentage of the area sown last fall. The Department, then, by deducting the area abandoned from that sown last fall, will be enabled to determine the total area which, in the absence of further serious injury, will be harvested this year. In the event of the acreage being considerably reduced from any cause, correspondents are respectfully requested to give such explanation in the blank space below as will account for the reduction.

NOTE 2.—The inquiry with regard to the **condition** of winter wheat applies only to that portion of the crop which, from present indications, will be harvested. That which will be abandoned should be entirely disregarded.

REMARKS.

Mrs May Can was one of those beautiful Irish Mothers who having passed through the stress and storm of life was moving calmly into the great sea of Death and Sterility.

There is something behind it all that I don't understand but some day I will understand it and see all Gods love to me and not his anger and I will be resigned

Name : _____ County : _____

Post-office : _____ State : _____

[OVER.]

8) The foregoing that I am opposed
to the teaching of Agriculture in the
schools - I am not, but most
emphatically favor it to the extent
that it can be taught successfully

I am opposed to faulty reasons
for introducing it. There is one
reason I accept and it is sufficient
and that is: Some knowledge of
Agriculture belongs to the equipment
essential to a reasonably broad
Education, even a common Education

Botany and Chemistry are taught
in the secondary schools not because
the average pupil expects to be a
botanist or chemist or even to use
them very much in practical life
but because they deal with the
things about us and explain them
Not to know something of these
branches is to be considered ignorant

Just so the domain with which
Agriculture deals is all about us
more than half our population
reside in the country, the material of
which our houses are constructed,
our food and our clothing are all
of country origin and related to
Agriculture Not to know something

Shall agriculture be taught in
The Secondary Schools of the U.S.

Thoughtful
The people of our country
have become alarmed at the rapidity
with which increase of municipal
wealth is compared with that of
the rural districts upon which
they depend for support. It is
not alone the aggregation of
great wealth and population
in a few ^{city} centers of trade but rapid
transfer of national influence
and political power from the
home making and liberty loving
democracy of the rural domains
to the centers of wealth where the
few are dominant. A large proportion
of the vast wealth created annually
in the country ultimately enriches
the city instead of developing and
improving the resources of the country.
The enormous sums paid by
the farmers for transportation and
to other public utilities, for insurance
of all kinds, for ~~goods purchased~~
clothing and ~~for~~ manufacturers all find
their way into city coffers and
finally the majority of money left
the farmer from a year's toil is
taken to a city bank and deposited
for safe keeping.

~~price in Ten Thousand Times~~

The second reason given
is that such instruction will make
better and more successful
farmers. Such assertions arise
from a complete misapprehension
of what the science of agriculture
is. It is entirely distinct from
~~the~~ botany, chemistry and other sciences
related to it. As a science, it has to do
with the conditions under which

related to it As a science
with the organic conditions ^{of soil}
^{how to build them with plant food and stimulants}
manipulation of soils, with the best
propagation of plants and the best
methods of promoting their growth,
with the selection, preservation and
germination of seeds, with pomology
^{and animal husbandry}. A man
may be well versed in all the
sciences that relate to agriculture
and be master of the things I have
enumerated as belonging to agriculture
and yet be a ^{failure as a} farmer. There
is a business side to farming and
it is the most important part -
how to plan the work and use
the labor and teams to the greatest
profit, how to economize in purchases
and improve the farm to advantage.
The scholars unfortunately do not

Lord Brougham.
from Sumner's Four
Georges.

Among other peculiarities which he exhibited, he was capable of uttering original aphorisms: An illustration of this may be found in his phrase "the schoolmaster is abroad" which was uttered by him in 1828 in a ^{Speech} in reference to the appointment of the Duke of Wellington as prime minister and as successor to Mr Canning. Said he;
'Field Marshal the Duke of Wellington may take the army - he may take the navy - he may take the great seal - he may take the ^{mitre}.
I make him a present of them all.
Let him come on with his whole

(13) ^{shapefully}
I note that the larger proportion of ^{women} Teachers are
through the hearts of
The Southern people forms the best blood
of the world. ^{Our masses have} They have honesty & courage, but
they have industrially ^{they have} lacked ^{faith} ~~faith~~ and
inspiration. Faith is the mightiest power in
the world. It believes all things; it hopes
all things; it dares all things; it ^{inspiration} ~~finds a way~~ ^{finds a way over or under} it
~~at the insurmountable and~~ accomplishes the
impossible. Men have strength and courage
; women have faith and ^{inspiration} ~~power~~ They are
mightier than we. Many a man has
ascended the ladder of fame till
the gazing multitude could not see
the ^{his supports} ~~base~~ ^{Oh! dimly lighted multitude!} ~~where he stood~~ & musical
train down ^{your} eyes and look again - ^{Behold!} ~~underneath~~ ^{mighty}
and around ^{that} ~~there~~ ^{are} the strong faith & ^{hope}
inspiration
of a wife or mother, praying, lifting
pushing and pointing upward.

A woman once said to me, "What
we women need is a mission and
an inspiration." Look! Down among the
masses each good man is struggling and
lifting to get some human being higher
- But he is in the midst of the fray and there is
no room to pray. Women hold the lever ^{of faith} ^{inspiration}
and know where to place the fulcrum,
pray, or wave a flag or shout

impossible. Let it be remembered that no one expects it to be done in a day nor a year nor a generation. It must germinate and it must grow, but it must be planted and cultivated. ⁽²⁾ A myriad of tiny animalcules live in the bottom of the ocean and as they look up through the incumbent waters they might think how impossible it would be to build a durable structure to the surface, but they bend to the task and in the process of years a coral island rises from the bosom of the sea and is finally covered with tropical verdure and becomes the habitation of man.

Centuries ago few fishermen of Galilee were inspired with the hope that they might be instruments in founding a new kingdom of higher type and greater happiness; they must first master the empire of Rome, the mistress of the world, and overthrow the philosophy of Greece which dominated its thought. Their leader was crucified and their task appeared impossible, but one day as they fished the Master appeared and touched them. They sought the shore; they turned their backs to the sea and their faces to their problems, and won. The power to do mighty things is as great now as in any period of human history. If Paul dared to cross the Hellespont armed only with faith, hope and inspiration, to meet the legions of Rome and the philosophy of Athens, surely five hundred thousand American teachers should not hesitate to undertake to reconstruct rural condition, develop the resources of the soil, uncover the wealth in forest and mine and found a bucolic civilization of cultured, strong and energetic men with power to lead and dominate the races of man in all that tends to human betterment.

Charlotte N.C. June 18 1908
Hoxville Tenn June 27 1908

What can the Teacher do for the
Improvement of Rural Conditions?

Not quite half a century has elapsed since these States, now so peaceful, were engaged in a relentless war. In that struggle the resources of the country were taxed to their limit and the proceeds expended with lavish hand. Under the tremendous forces evoked boys sobered in a day and became men, and men became heroes; battles were won or lost; women suffered and wept, men fought and died, but the purpose of the people faltered not.

The Southern States are now in the midst of a greater struggle than that and one more far-reaching in its consequences. It is the conflict of the industries waged for industrial independence and a chance to contend with the most favored people or nations for the industrial supremacy of the world. Every acre of land, every dollar of capital and every citizen in the South are involved in the issue. Its results will determine the measure of improvement and the ultimate value of our farms, the comforts and culture of our homes and the educational advantages afforded our people. Hitherto our aspirations have been too individual. Each man has sought wealth or power for himself that he might have ease and comfort or position and influence. Individuals die; races live; his ambitions and achievements should have been for his race. His purposes have been too

narrow and too low; instead of seeking local supremacy and fame he should aspire to a supremacy which reaches, and strengthens, and elevates every individual and results in the industrial conquest of the world. The industries here are simply regarded as the material evidence of the culture and potentiality of men. 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.

The production of raw material is the lowest round in the ladder of industry. We have stepped one foot on this and looked down instead of up. We have been content to produce cotton, sugar, rice and tobacco and buy the remainder. With few exceptions we have produced them in an uneconomic way and without effort at excellence. In these products we have four of the best cash crops of the world. They yield us about eight hundred and fifty millions annually; of this about five hundred and fifty millions are exported. What becomes of this vast sum annually flowing to the South? It is mostly returned to buy the vast variety of articles we do not produce.

~~A distinguished son of the South was accustomed to tell this story. He attended a funeral; the hearse was made in Chicago; the horses came from Illinois; the har-~~

nesses were purchased in Cincinnati, the shroud was woven in England and the preacher was imported from Philadelphia. The only part the South had in the funeral was the corpse.

We must climb the ladder of industry. If Southern farmers would produce upon their farms the food for the people and domestic animals required to till the farm there would be a great gain in bank accounts. From the standpoint of the farm the Southern people occupy a vantage ground for prosperity greater than that of any other people in the present or the past. The possibility of immensely increasing their gains is within reach. The Southern farmer can learn if he will, how to increase the average product of each acre threefold. The methods are simple and can be understood and practiced by the illiterate as well as the learned. He can increase the efficiency of each farm laborer fivefold by the use of more and better teams, better implements and labor saving machinery. In the two items of increased production, and increased efficiency of labor is a possible gain of fifteenfold.

About sixty per cent of the lands of the South are idle and mainly a tax upon the forty per cent improved. Every idle acre should be made tributary to the net bank account. An idle acre of land is as great a sin against civilization as an idle man. They both eat and do not work. If idle lands are a tax upon the wealth of the nation much more is

the enormous and increasing idleness of the American people. More than thirty millions of our population are mainly spenders of wealth rather than contributors. It ought not so to be. Every man and every woman and every child over six years of age should have some useful line of work for gain. The labor of housekeeping should be reduced to its lowest limits by the installment of labor saving devices, so as to greatly increase the lines of gainful labor. We are importing annually fifty-four millions dollars worth of unmanufactured silk. Every pound of silk used could be produced at home by the non-working children. Silk worms are easily raised and their food, the mulberry leaves, are found everywhere in the South. X The garden, the poultry and the cow should be a part of the home. They are required for education and training as well as for support. They stand for health and vigor, for better nourishment and greater economy and they foster education and morals. P The science of conserving and wisely expending gains is as important as the science of producing them. P The loss to the people of the United States from disease, mainly due to mal-nutrition and lack of open air and physical exercise is something enormous. Without exact data I place the sum at twenty dollars per capita, or one billion eight hundred millions annually for the nation. Ninety per cent of this vast sum could be saved by the right education and training. There is something radically wrong about an education that tends

to a weakening of the race. The loss by failure to use the labor of the family to produce the food for the home and by actual idleness in the nation exceeds one billion annually. The loss by uneconomic expenditure exceeds another billion. The facility with which costs can be added without increasing the value is something marvelous. The sweet potato worth a cent is canned, a flaming label put on and is eagerly bought at fifteen cents. A head of cabbage costing one cent for production is readily retailed from the market at five to fifteen cents. The farmer sells a pound of cotton for ten cents and buys it back from the shelf of the merchant at thirty to forty cents per pound. The transformation of the raw cotton into the woven and finished fabric actually cost only five to seven cents per pound; the rest is the fiction of transportation and the jugglery of profits. These can be eliminated by home manufactures. The spindle, the loom and the workshop must be close to the farm.

There is another great waste, the excreta of animals. If the solid and liquid excreta of human beings and domestic animals be included, the annual loss exceeds a billion. It is carried into creeks, rivers, harbors, oceans at immense cost with the sole purpose of disposing of waste. Science has shown how this can be easily and economically converted by germs into available nitrates. ^P The loss by uneconomic transportation is measured by millions. We have neglected

our water ways and transport our food, our constructive material and our fuel by artificial highways, miscalled rapid transit. A trained ox hitched to a loaded canal boat will make better speed than many freights by rail.

Actual gain in rural wealth is illusive . In many cases the deterioration of the soil more than equals the cost of improvements upon the farm.

The tremendous problem before us is the building and perpetuating of a high civilization. Mental training, culture and refinement are assets of value, but men die and these gains are lost. To be enduring brains must be bound into books, mouldered or hammered into structures of iron, shaped into habitations of brick; carved into marble or granite; packed into highways, rolled into thought conveyors strung on poles to carry the voice across a continent, or placed in some usable and enduring form, helpful to the human race. We must rebuild our wasted soils, restore the valuable woods to our forests, construct economic and enduring highways, substitute in the country substantial structures of brick or stone for our frail tenements of wood; the meadows must send their fragrance from the valleys; the fruit trees must cover the hilltops with bloom; the school house, the church and the factory must gladden the view from every summit. We must build a complete and enduring rural

civilization where strong and vigorous manhood is reared and where the purest and rarest forms of womanhood are in bloom. To do this will require not only high purpose and great intelligence but some radical changes in our methods. Every step upward in civilization costs and the highest conditions are enormously expensive. If we would have the resources to carry out our plans we must increase the net earnings of the rural toiler at least fivefold; every idle acre of land must be made to produce and every idle man and woman drafted into the army of toil; extravagance and waste must cease; intelligence must dominate matter; and universal vigor take up the tasks of general frailty. Our industrial Cromwells must lead an army of ironsides - men that pray and fight.

In this great uplift - what part can the teachers take? And what part must the teacher take or our civilization will be of too low a standard. Next to the parent the teacher is the greatest power in our civilization - Their office is not solely to instruct in rudimentary or higher educations; they weave the threads of thought into mental fabrics; they plant the germs of future work and worth in the mental garden; they sit in judgment on heroes and statesmen; they are moulders of destiny; they carve out Empires small and large; they finally readjust the map of the world. It was the German School teachers, not Bismark and Von Moltke, that won at Sedan.

B. Brainerd

To do this work successfully requires breadth of knowledge on the part of the teacher. In this statement it is assured that the fundamental branches are well taught. It is a high science to encourage, inspire and thoroughly instruct children untrained to think. The foundation is the most important part of the future scholarship. A teacher that has done this work well deserves great credit and justly stands high upon the roll of successful teachers. However, from our point of view such teachers, have done only one third of the work required. They are one third of the highest type of a teacher.

The second third is the training of the observation and the memory. Up to the time, when the child enters the school room, the acquisition of knowledge has been mainly through observation. Suddenly a book is thrust before the eyes and the child is told to form a conception of an object from the description. He does not conceive. The word types make only a blur on the brain. This change is too radical. It should be gradual. There is too much book work in the schools. In all the school life the method by which we acquire knowledge the first three years of life, a trained eye and ear and an exact memory, should be continued as far as possible. / Ninety five per cent of the usable knowledge of the world must be acquired that way. It is the main training for life; books are only aids. If we can not see and hear and know, then use

a book; but it is only a substitute. A book comes about as near meeting the wants of the scholar thirsting for knowledge as the description of a circus to satisfying the boy who wants to see the real thing; and yet blessed be books; they are mighty helps. Error is rife everywhere; few people tell the exact truth; and yet in the main the misconceptions and strifes that result from this are due to an untrained eye that does not measure or outline accurately, or to an ear defective in its apprehension of sound language, or a memory without accuracy or grip. This is faulty training.

Suppose a laborer in a garden should transfer a thrifty, vigorous, rapidly developing plant from a moist, fertile and sunlit soil to one that is cold, dry and shaded the effect would be immediate. The gardener would call the plant stunted. Many a boy and girl have been stunted when transferred from the genial and sunlit schoolroom of God in their first years of study to the cold, dry and shaded schoolroom of man with a book thrust before them. The observation and memory are trained by use. Fill the child's mind with a knowledge of common things. They can never be taught so successfully as then. It is nature's way. The creeping midget upon the house floor is a student of environment of which the door that jams the finger and the hot coal are apart. Man is but a creeping midget upon the arena of life and unless he knows his environment he is constantly picking up a live coal or putting his fingers in the way of some slamming social device.

At three years old the average American child has learned to speak the English language and has mastered the names and uses of all the things about the home. At the same rate of progress a child could acquire a knowledge of the common and essential things about the soil, the seeds, the plants, the flowers, the shrubs, the trees, the domestic animals, the local insects and the native birds without cramming or in any way interfering with his progress in the fundamental branches of learning usually taught.

At twelve years of age every boy and girl, in addition to the acquisition of a good, practical, English education should be a perfect encyclopaedia of the knowledge of common things. They should know the main usable facts about everything in the vegetable and animal kingdom, that is, in common use, and should be similarly informed as to manufactured articles and their uses. They should be ready for a post graduate course in all home matters. This requires no cramming. It can all be accomplished by a simple and natural absorption. Put the things to be learned in their way so they can not fail to see them frequently. Have all the common trees and plants in the yard at home, or at the schoolhouse; place a durable label on them, giving the common name and their ordinary uses, and along similar lines carry out the whole plan of education. Knowledge for the young should not be mixed with rhubarb but should be made into candy and taken in drops. It should not be branded on to them with a hot iron, but should be formed into bouquets and graciously given with good will.

The final work of the great teacher is to reach the homes and influence the parents, so that home environment, if it does not precede, will at least keep pace with the education of the children. Education can not attain its greatest results unless the home and the school are co-laborers. The mighty power of home in moulding childhood and youth must be utilized. It can be done by interesting parents in the advance methods employed with the children, by public meeting for rural improvement, by personal visits and appeals, and by rural associations for home and school betterment. Do not try to accomplish too much at one time. Do not expect immediate results.

There appears to be a general demand for the teaching of agriculture in the rural schools. Upon the following plan I see no reason why it can not be made a success:

(1) Do not try to teach in primary schools everything closely or remotely related to agriculture. This would exhaust the resources of the wealthiest college of agriculture in the land.

(2) Outline the few things absolutely essential to success in agriculture. Some of these are principles, some are practices, and some are business methods. The principles can be taught; the practices and business methods must be acquired by observation and experience.

At an early period it was found necessary to evolve from the mass of ethical teaching, a few general rules for living, called the ten commandments by which a man could be moral with-

out taking a course in theology. Just so, at the commencement of our Demonstration Work to instruct the average farmer how to produce larger crops at a less cost, we found it necessary to first deduce from the mass of agricultural teachings a few general rules of procedure, which we have called the ten commandments of agriculture, by the practice of which a man may be a good farmer in any state without being a graduate of an agricultural college. They are as follows:

- (1) A deep and thoroughly pulverized seed bed, well drained; deep fall breaking (plowing) with implements that will not bring the subsoil to the surface.
- (2) The use of 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) Intensive tillage during the growing period of the crops.
- (5) A high content of humus in the soil. The use of legumes, barnyard manure, farm refuse, and commercial fertilizers.
- (6) The value of crop rotation and a winter cover crop on southern farms.
- (7) The accomplishing of more work in a day on the farm 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) The production of all food required for the men and animals on the farm.

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

A man may be covered with diplomas from institutions of agriculture and be filled with bucolic lore, but he will never enter the farmers' paradise unless he observes these commandments of agriculture.

The value of good drainage, the deeper and more thoroughly pulverized seed bed, abundant humus, the best seeds, intensive cultivation and proper and economic fertilization can be taught in the school garden, in plats as small as eight feet square, and for some varieties much smaller will give results. These plats are the open air blackboards for demonstration. The following rules should be observed in their use where agriculture is to be taught:

(1) The examples should be agricultural examples and not those of a park or a floral garden.

(2) The lessons must be limited in range, simple in statement and fundamental in character.

(3) Use no scientific names; call that common tree a white oak and not a quercus alba; call wheat, wheat and not triticum vulgare, and oats, oats, not avena sativa. Children

are learning for practical use and one name will answer. In packing a thing into the human brain it is not well to have it fit so loosely that it will require a big name on each side for filling.

(4) The final value of the lessons will depend upon thoroughly fixing in the mind a few fundamental principles. The bane of teaching is the tendency to spread.

There are three simple things essential to profitable agriculture, to wit:

(1) A deep and thoroughly pulverized seed bed, well drained and filled with humus.

(2) The use of seed of the best variety, carefully selected to an approved type and of the highest vitality.

(3) Intensive cultivation.

If by means of the school garden these three things can be successfully transferred to the brain of the American youth and be universally practiced on the farms it would increase the aggregate income of all our husbandmen sufficient to pay the salaries of all the common school and high school teachers in the United States, if doubled, and the salaries of all the college professors and then there would be sufficient surplus to build and equip a school house in every rural township throughout the land.

There are three more things of great value to be added,-

1st.-How to live in a simple and economic way and provide the best nourishment for the human race and for the domestic animals.

2nd.-How to convert all the vegetable mould, now wasting, into humus and all the excreta of the human family and of the domestic animals into available nitrates for the renovation of the soil.

3rd.-How to secure a fair profit from the lands that now produce only a crop of taxes.

If these could be taught and universally practiced it would increase the bank accounts of the American farmers by a sum sufficient to build reservoirs at the sources of our rivers and send their waters more slowly to the sea; sufficient to transform every river of consequence into a highway of commerce, to dam every rapids and convert the falling waters into electric power to supply every manufactory and light every home in the land, and sufficient to reforest all our mountain lands for the conservation of moisture, the improvement of climate and the future timber supply of our nation. In the six things before named there is a wealth of possible product and profit that make all the gold mines of the world look like a ten cent piece.

But many things absolutely essential to success in agriculture can not be taught in the common schools. They are not taught in the agricultural colleges. They can be said, but saying a things is not teaching. Parrots can say things and occasionally a human parrot attempts to teach or write a book. There is all of that great and difficult side of agriculture, - the practical side; how to utilize everything to the greatest

advantage; how to increase the accomplishments and decrease the expenses; how to substitute more teams and better tools for human labor and how to use the light gas engine instead of human hands for washing, ironing, pumping water, sawing wood, husking corn, milking cows and making butter; thus converting farm drudgery into accomplishments without toil, by a service without a wage and one that never tires, nor strikes, nor has the rheumatism. How to secure this practical training and connect it with the common school machinery has been our problem. For a long time I thought it could not be done; at last a method has been evolved which thus far has proven a surprising success. In a state where there are county superintendents of public instruction, four such superintendents were commissioned collaborators by the Secretary of Agriculture. This gave them the privilege of using government stationery and the frank for letters and circulars and gave to each school boy demonstrator full instructions how to raise the crop. The United States Department of Agriculture furnished the seeds for test and the public spirited citizens of each county subscribed ample funds for premiums to intensify the interest in the contests. The boys' names were published in the county papers. They received their first inspiration for farm work. Over eleven hundred boys were enrolled in this school demonstration work. Thus far it has been a success beyond our expectations. The lads have taken the deepest interest in the plan and have faithfully followed instructions. Other boys

observe; their parents are keen for the contest, alive to the results and derive fully as much benefit from the demonstrations as their children; the people who furnish the prizes are interested; there is an uplift of the whole community.

The economic side appeals to the people. It has been feared in some quarters that this extension of the lines of education would call for such a vast expenditure of money that it would fail because it was impossible to sustain it. In this trial the total additional cost to the United States Department of Agriculture in conducting 400 school boy demonstration farms in a county is less than fifty dollars per annum or twelve and a half cents per farm. The County Superintendent does his part as a work of love and pleasure, - the people the rest. This school extension cooperative work is a miracle of success. In a short time I trust there will be a further extension of the Cooperative Demonstration system into rural homes. This time four hundred girls under proper instruction and supervision may be invited to contest for valuable prizes in domestic economy, the best house keeping, the best preparation of the simple foods, the best work in making the common garments of the home or the best poultry and garden, and this plan be extended until it has revolutionized every home in the land.

In outlining all the lines of work to be added and all the responsibilities of teachers, we are impressed with the greatness of their duties. These appear stupendous, even