

PRACTICAL HINTS ON FARM PRACTICES.

Importance of Proper Seed—Plowing—The Vital Need of Crop Rotation—Live Stock and Its Relation to the Farm—Use of Cover Crops—Williamson Plan.

(A lecture delivered by D. R. Coker of Hartsville before the students and faculty of the University of South Carolina.)

When the university authorities planned the course of agricultural lectures which have been given here during the past year and a half, they were, I think, proceeding under the theory that some knowledge of the basic principles of agriculture should be a part of the equipment of every educated man. The general prosperity of our country is very largely based on the success of the farmer. None of us is independent of him. Merchant, manufacturer, professional man, salaried man, laborer—all prosper in proportion to the money value of the crops, so every citizen has a direct interest in agriculture and should be in a position to use his influence intelligently in its behalf.

Another reason for giving this course of lectures is that, whether you know it or not, quite a number of you are going to become farmers. I presume that a fair proportion of you expect to follow agriculture as a profession, but some who do not now suspect it will some day derive their incomes directly from the soil. A very large proportion of the young men who pass through college ultimately take up other professions than those they contemplated before graduation. This speaker was in his 27th year before he took anything more than a superficial interest in agriculture. Without having statistics before me, I will venture the assertion that very nearly as large a proportion of the graduates of the University of South Carolina during the past 20 years are actually conducting farms today as are the graduates of Clemson college for the same period. It is certainly beyond question that many of the most enlightened and useful farmers in the State today are graduates of this institution. So, gentlemen, I think it behooves you to improve every opportunity of gaining all the knowledge you can of our great basic industry, agriculture.

I have come to you today to tell you about a few of the agricultural problems which confront your farmers and to make suggestions as to their solution. I shall direct your attention to some of the more common mistakes now being made and give you some ideas as to how they may be avoided.

The method of farming employed in this country ever since the general introduction of cotton has been most disastrous in its effect upon the soil. A very large proportion of our lands having been continuously devoted to this clean, culture crop, the humus content of the soil has become almost exhausted. Now humus is the most valuable and necessary constituent of the soil. It furnishes plant food; is the host of innumerable bacteria which are beneficial to plant life; it takes in and stores the moisture, giving it back in times of drought; it prevents the leaching of the available fertility of the soil and prevents washing from heavy rains. Without it a soil is poor—with it rich. Our farmers have been forced to resort to a large and gradually increasing use of fertilizers in order to in some measure offset the loss of humus caused by years of clean culture. While they have saved themselves from absolute ruin by this expedient, they have not stopped their humus destroying method of farming, and it is only by steadily increasing the annual fertilizer ration that the cotton farmer is able to maintain the average size of his crop.

There is good reason for believing that the continuous growing of certain crops on the same land gradually produces in increasing quantities a toxic substance, which interferes with the welfare of that crop but which promptly disappears when the soil is transferred to another crop. It is also a well known fact that the diseases and insect enemies of any crop become worse and worse where it is continuously planted on the same land.

The average cotton farmer of our State is fast approaching the point where his increasing fertilizer bill will entirely extinguish his average profit, and I do not see how this can long be avoided except by a radical change of method involving crop rotation, deep plowing and cover crops.

I would not have it understood that I am an opponent of the rational use of fertilizers. On the contrary I believe that they can always be used with great profit on properly conducted farms in this section. I do believe, however, that where the farmer continues to plant the bulk of his acreage in cotton, breaking his land shallow and depending exclusively on fertilizer to restore soil fertility, he will sooner or later become bankrupt.

We had last year several illuminating lectures on the subject of cover

crops by Mr. A. G. Smith. Mr. Smith ably advocates the use of crimson clover and hairy vetch as a means of restoring soil fertility, and I quite agree with him as to their value under conditions which suit them. They do excellently on clay or limestone soils and I have occasionally seen them growing successfully on rich lands in eastern Carolina. I must say, however, that most of those who have tried to grow these crops in our gray, sandy loam cotton fields have failed—I among them. A serious objection to them is that they do not make a good cover for the soil in time to allow of their being plowed down during the winter.

Realizing the need of discovering and inducing the farmers to use crops which would produce an abundance of grazing and hay and at the same time restore fertility, I began experimenting a good many years ago with the clovers, vetches, and various grains, including Chinese sorghum. It was through the courtesy of Mr. W. A. Orton of the department of agriculture, however, that I finally discovered a crop which I think is ideal for grazing and winter cover. This is a species of rye introduced by our government from the province of Abruzzi in Italy.

After several years of testing I find that this rye makes a growth of from two to four times as much during the winter months as our native ryes. Planted in the cotton during September or October at the rate of one bushel per acre, and covered with cultivator or wide sweep, it makes a quick and thrifty growth, and we have already plowed in on our plantations hundreds of acres of this rye, which had reached a height of 12 to 18 inches. The rapid growth of this rye is almost unbelievable and it would interest you very much to see growing side by side on our experimental farm test plots of this Abruzzi rye and several Southern varieties, as the contrast is most striking.

Early last March we clipped by hand several short rows of Abruzzi rye and rows of equal length of Virginia and home-raised rye, all of which were planted late in November, and found by weighing that the Italian rye had made more than three and one-half times as much growth as the other varieties during the winter. We are repeating this test again this year, and at the first cutting made, about three weeks ago, the Italian rye produced from two to three times as much as the other varieties.

Last year we planted Abruzzi rye upon a piece of land on which we had never raised more than one bale of cotton per acre. We used no fertilizer, the seed being sown after a crop of peavine hay and then harrowed in with double cutaway harrow. About one-half of the field was left to make seed and produced 24 1-2 bushels per acre, which is a much greater yield than I have ever heard of ordinary rye making under normal conditions. The other half of this field of rye was mowed in March and the stubble turned under. Our variety test of cotton was planted on a part of this land and fertilized and worked exactly like our main crop, but produced about 1,900 pounds of seed cotton per acre as against a much smaller yield in our other fields.

I am disposed to believe, from the data I have thus far accumulated, that Abruzzi rye is the most important agricultural plant introduced in the South in recent years.

One of the strongest indictments which can be drawn against the agriculture of our State lies in the fact that we import millions of dollars worth of Western grain, hay and meat each year and I do not think that we can claim a high degree of efficiency for our farming until these imports have ceased. On the farms which I managed I find it pays to raise a surplus of hay, grains, oats, rye and hogs. It also pays us to feed cattle and apply the manure to the land. Besides more than paying their own way, these plants and animal crops exert a great collateral influence on the production of our principal money crop—cotton.

I think you will find it an invariable rule throughout the South that where large numbers of animals are fed on any farm, that farm is rich and produces profitable crops of all kinds. We can not rotate our lands rapidly unless we seed a large proportion of the acreage to hay and grain crops and this renders necessary the keeping of more live stock to consume the surplus. A quick rotation also allows the frequent use of cow pea, that splendid gatherer of nitrogen and humus. On the two farms which we work with wage hands we have already cut out cotton acreage to nearly one-half the total crop area and expect to curtail it still further. I expect, however, to continue to raise fully as much cotton as formerly because of the rapid improvement of the soil caused by rapid rotation, the frequent use of the cow pea, the plowing in of cover crops, the use of the manure from live stock, deep plowing, and the breeding of more prolific varieties of seeds.

Our great Darlington county agriculturist, E. McIver Williamson, has shown the South how to raise corn, and while his method is being used to great advantage by thousands, the fact that our State continues to import corn proves that his advice has not been heeded by a great number of our farmers.

Mr. Williamson's revolutionary discoveries were at first bitterly attacked by many of the agricultural authorities of the South and while the results so widely obtained in this State have silenced some of them, there are still, I think, quite a number who are unconvinced.

The year after Mr. Williamson announced his method I planned a series of experiments to test its efficiency. After discussing my plans with several of the authorities of the national department of agriculture, I decided to make my test of the Williamson method against a method identical with his except that the stunting feature should be left out. This involved level planting, rapid culture and the early application of fertilizers to one plot while the Williamson plot was, of course, planted and cultivated strictly according to his methods. Both plots were well prepared, seeded to the same variety and to the same distances in drill and row. These tests were not intended to show the benefit of the Williamson method as against the old method formerly employed, but were meant solely to answer so earnestly scientific critics who had so scornfully inveighed against it.

These experiments have now extended over a period of five years. An accident happened to one of the 1911 plots and I will not mention that just here. During the other four years the experiments were carefully carried to completion without accident, all work, except the ordinary cultivation, being done by young men of education and experience. The average of these four years shows a gain for the Williamson method of 7:05 bushels per acre. Every year the Williamson method plots were stunted severely, and in some instances we had to bar them off with turn plows cutting roots by the wholesale in order to get the proper effect. (I might mention just here that some years ago I plowed up and set out a whole row of corn after it was a foot or more high, and that row made considerable more than an adjoining row which was planted a few days before the other row was set out.)

In my 1911 experiments we failed to get a stand on the early manured plot, owing, I think to the killing of the seed by the fertilizer. This plot was planted again two weeks later and was cultivated exactly like the Williamson method plot with the exception that no effort was made to stunt it. Fertilizer was applied at the time of the application to the Williamson plot and to the same amount; thus this plot received double the fertilizer of the other. Notwithstanding this tremendous advantage, the Williamson method plot made seven and one-half bushels per acre more.

Before leaving the subject of corn I must not fail to speak of one of the worst practices now generally employed on Southern farms. I refer to the stripping of the fodder. The leaf of the plant makes and stores in the grain its starch, oil and protein. This process is continuous in the corn plant as long as the blades have any life. Consequently when the leaves are stripped from the plant, before they are completely dead, or when the plant is cut down before maturity, the corn is not allowed to fully mature and thus the crop is shortened and the vitality of the seed injured.

I have carried on numerous experiments to show the loss to the crop from fodder pulling. I have always made these tests rather later than the average date of fodder pulling in our section, but notwithstanding, the reduction in yield has been most striking. In 1912 I made two tests which showed an average reduction of seven and one-half bushels per acre. In 1911 four tests showed an average reduction of 6.6 bushels per acre. In 1910 this experiment was overlooked until the blades were about two-thirds dry and even then the loss was about four bushels per acre. In every case we have figured that the loss in corn was fully as much as the value of the fodder, which would leave the expense of gathering as a loss. Besides, the immaturity of the seed taken from plants from which the fodder has been stripped almost surely affects the yield of the succeeding crop. (We have planned a test this year to see what this loss is.)

The average farmer does not plow deeply enough. Year after year he scratches the soil to a depth of 3 to 4 inches with a one-horse plow, or possibly he turns from 5 to 6 inches of soil with a two-horse implement and the roots of the crop are practically confined to this plowed depth for their plant food and moisture. I doubt if deep plowing is very beneficial on humus depleted lands, especially if done in the spring, but I am sure that our farms can not be brought to high productive capacity without deep plowing coupled with the employment of crops which pro-

duce a large amount of humus. This is a part of the gospel of the Williamson plan.

Good preparation of the land is expensive. Done with 300 mules and \$1 a day laborers, it costs approximately \$3 per acre for cutting the stalks, plowing the land with two-horse plows and harrowing with cut away harrow. We have recently bought a traction engine with which we are plowing down the uncut cotton stalks, breaking the soil 10 to 12 inches deep and at the same time harrowing it thoroughly. Figuring 6 inches as the depth usually plowed by two-horse teams and 10 inches as the depth of the preparation with the traction engine, each inch of the mule broken land costs 50 cents per acre to prepare against 20 cents per inch per acre for that prepared by the traction engine.

The actual cost of running our traction engine is less than \$1 per acre for fuel and labor. Call this expense \$1 and add another dollar for interest and depreciation and you have the figure upon which the preceding estimate is made. The main value of the power propelled plow, however, is not in the saving in cost of preparation, but is in getting the plowing done at the right time and done right.

The smaller farmers can obtain the advantages of the traction engine by combining and several together purchasing an outfit. Or possibly plow outfits may some day go from farm to farm (just as threshers do now) and break the land for so much per acre.

One of the most important discoveries we have made in our experimental work is that a very much smaller amount of oat seed than is usually used by the average farmer seems to produce maximum results. For three years in succession we tested in our experimental blocks seedings at the rate of 3, 6 and 12 pecks per acre, and invariably had gotten heaviest yields with three pecks. I would not, however, advise as light a rate of seeding as this unless the grain drill is used, for seed planted broadcast are frequently thinned out badly by heavy freezes.

The limits of this paper forbid my telling you about my experiments with sorghum, which we have found to be a most valuable hay crop and which (the general impression to the contrary notwithstanding) seems to exert a beneficial effect on subsequent crops. Nor can I speak at length about the use of lime and its effect on crop production, but will only say that I believe practically all the land in eastern Carolina needs an application of one-half to one ton of lime or twice the quantity of ground limestone about once every five years.

I would like to warn you never to judge crop results on the farm by the eye and tell you how often trained observers make mistakes when they trust the eye rather than the scale—I would like to urge you to do all agricultural experimental work under absolutely normal conditions, and never presume that any seed is of superior value until you have tested it along side of other varieties upon average lands with average fertilizer and culture. I would like to urge upon you the supreme importance of good seed, which are bred to pedigree and increased only after being tested against numerous other strains, but if I should go fully into all these subjects I would keep you here several hours. I could talk alone on the technique of seed breeding and its importance to our agriculture, for hours, but that subject has already been admirably handled by other lecturers.

But above all I would like to give you an insight into the attractiveness and usefulness of plant breeding and all other work requiring a close study of nature. No work possesses greater possibilities of usefulness or pleasure than plant breeding. None keeps you in closer touch with the great directing Intelligence of the Universe. The plant breeder is in fact partner with nature.

If any of you young men are interested in the seed breeding and experimental work we are doing at Hartsville, I shall be glad to have you come over at any time and will afford you every facility for looking over our entire plant.

How the Trouble Starts.
Constipation is the cause of many ailments and disorders that make life miserable. Take Chamberlain's Tablets, keep your bowels regular and you will avoid these diseases. For sale by all dealers.—Advt.

The Governor of Georgia appeals to the press to aid him in carrying out needed reforms. The Governor in South Carolina tells the press to go to, or words to that effect.—Wilmington Star.

Minister Praises this Laxative.
Rev. H. Stubenvoll of Allison, Ia., in praising Dr. King's New Life Pills for constipation, writes—"Dr. King's New Life Pills are such perfect pills no home should be without them." No better regulator for the liver and bowels. Every pill guaranteed. Try them. Price 25c at your druggist.—Advt.

CURRENCY FIGHT ON.

Probability is That Contest Will Drag on Through Next Week and Go Into House.

Washington, Aug. 15.—After three hours of lively discussion between the administration forces and the currency "insurgents" the house Democratic caucus late today adjourned until Monday. The fight for amendments to the bill had been bitter and tonight prospects were that the caucus might run through all next week, with a final contest on the floor of the house inevitable.

Attacks on the bill began in the caucus soon after Representative Borland of Missouri entered upon an analytical defense of the measure. He and Mr. Underwood, majority leader, were frequently interrupted.

Representative Hardwick of Georgia attacked the bill as creating a great monopoly in money, establishing "a gigantic political and financial machine conferring greater power than any man or set of men should have."

Representative Wingo of Arkansas, disclaiming any connection between his amendments and those proposed by others who are fighting for changes, said he proposed to protect the farmers' notes annually held in the Southern and Western banks.

Representative Henry of Texas, advocating amendments against interlocking directorates and for what he called "corn tassel and cotton bale cash," asserted that the refunding of the 2 per cent circulation bonds by the 3 per cent non-circulating bonds would permit a "big grab and steal by big banks."

SMALL BOY LEAVES JAID.

Small Boy Gives Freedom to Joe Vincent—Shot and Killed His Father.

Augusta, Ga., Aug. 14.—Twelve-year-old Lee Vincent, the boy who Monday night of last week shot and killed his father, Joe Vincent, at Milledgeville, a little station in Aiken county, to protect his mother from harm, the elder Vincent having threatened to kill the whole family when he came home drunk, and did whip the boy's mother, was this morning released on \$500 bond—the lowest bond ever granted anyone charged with murder in Aiken county. Solicitor Gunter agreed to this small amount because of the circumstances.

Dave Gaston, Jr., who recently graduated from the law department of the University of South Carolina, has volunteered to defend young Vincent. When he went to the Aiken jail to tell the boy that his father, D. W. Gaston, president of the First National Bank of Aiken, had agreed voluntarily to go on the bond, the little prisoner said:

"I'm mighty glad I'm going to get out of here; my fodder needs pulling."

It develops that little Lee Vincent has been his mother's main support. Together the mother and little son have been farming, the father and husband contributing nothing to the crop. He spent little of his time at home, and, neighbors say, seldom went there except when drunk. Sheriff Howard of Aiken county went out to the Vincent's home a few days ago and found in the barn an illicit still, filled with mash, indicating that the dead man had been practicing his trade in Aiken county. He was wanted in Walthalla for the same offense.

Good Reason for His Enthusiasm.

When a man has suffered for several days with colic, diarrhoea or other form of bowel complaint and is then cured sound and well by one or two doses of Chamberlain's Colic, Cholera and Diarrhoea Remedy, as is often the case, it is but natural that he should be enthusiastic in his praise of the remedy, and especially is this the case of a severe attack when life is threatened. Try it when in need of such a remedy. It never fails. Sold by all dealers.—Advt.

There were 4,014 pupils in the Spartanburg city schools last year.

Remarkable Cure of Dysentery.

"I was attacked with dysentery about July 15th, and used the doctor's medicine and other remedies with no relief, only getting worse all the time. I was unable to do anything and my weight dropped from 145 to 125 pounds. I suffered for about two months when I was advised to use Chamberlain's Colic, Cholera and Diarrhoea Remedy. I used two bottles of it and it gave me permanent relief," writes B. W. Hill of Snow Hill, N. C. for sale by all dealers.—Advt.

Idle people have glib tongues.—Wilmington Star.

Costly Treatment.

"I was troubled with constipation and indigestion and spent hundreds of dollars for medicine and treatment," writes C. H. Hines, of Whitlow, Ark. "I went to a St. Louis hospital, also to a hospital in New Orleans, but no cure was effected. On returning home I began taking Chamberlain's Tablets, and worked right along. I used them for some time and am now all right." For sale by all dealers.—Advt.

NEW COLUMBIA OFFICE.

Former Gov. Heyward Announces Office of Internal Revenue Will Open September 1.

Washington, Aug. 14.—Former Gov. D. C. Heyward, who was recently nominated by the president to be collector of internal revenue for South Carolina, came to Washington yesterday in order to perfect himself in his duties with officials of the treasury department.

Practically all of yesterday and today were spent by Mr. Heyward in conference with treasury officials regarding the work that the former will undertake when his office is opened at Columbia on September 1.

"An examination will be held in Columbia on August 16 for the purpose of examining candidates for positions in the internal revenue service in South Carolina," said Mr. Heyward, "and from an eligible list my permanent force will be chosen. Between the time the office is opened, namely, on September 1, and the time that the civil service commission reports on those who have been selected for permanent positions, of course there will have to be a few temporary employees, but it should be distinctly understood that the latter are temporary only and that the permanent men must necessarily be chosen by means of the civil service examination. I would like to have this clearly understood, so there may be no misunderstanding regarding the matter."

"I have been in consultation with Commissioner Galloway and other members of the civil service commission, and they have promised to make known the result of the examination just referred to at the earliest time. I will leave for South Carolina tomorrow and, as stated, will open my office in Columbia on September 1."

J. W. ASHLEY ILL.

Well Known Member of House of Representatives From Anderson County is Stricken.

Anderson, Aug. 15.—Joshua W. Ashley, member of the house of representatives from Anderson county, suffered a stroke of paralysis at his home near Honea Path this morning and all through the day his condition has been grave. Tonight the attending physicians hold out a little more hope for his recovery than they did at noon.

Mr. Ashley attended the Ackr family reunion yesterday at Williamston and appeared in his usual good health and spirits. This morning he ate a hearty breakfast and then proceeded to direct some mechanics in repairing his cotton gin. One of the men called for some nails and Mr. Ashley started to a nearby house for them and while on his way the attack came upon him. He stumbled and fell, and when help reached him he was lying on the ground in an unconscious condition.

Mr. Ashley was carried to the house and doctors were quickly summoned. After a thorough examination they announced that he had suffered a stroke of paralysis in the right side. The left side was not harmed, responding to an injection of opiate. Late this afternoon it was noted that he could move his right foot, slightly, but he has not been able to speak. He seems to be semi-conscious but he has no way of communicating any wish he may have to members of his family. The doctors say that a blood vessel in Mr. Ashley's head burst and in their opinion it depends on whether the blood clotted will be absorbed in due time or whether the blood is still spreading through the brain. If the latter condition exists they declare that the end is near.

J. W. Ashley is the political "boss" of Anderson county, having become personally interested in politics more than 22 years ago. He has served 19 years in the legislature, all of his services having been continuous with the exception of one term when he dropped out, having run and been defeated for State senator. He is in his 65th year.

WELL

Is all "well" with your teeth? Don't make the fatal mistake of thinking your teeth can wait to be taken care of until "later." Have them attended to Now, while there is time to save them.

THE SUMTER DENTAL PARLORS,
Dr. C. H. Courtney, Prop.
Over SHAW & McCOLLUM