

A GOOD DOCUMENT.

[CONTINUED FROM PAGE ONE.]

free the law from criticism on that score. My experience in the Comptroller General's office satisfies me that the business can be conducted in such a way as to prevent stealing or detect and punish it if the dispensers or other officers connected with the dispensary attempt it. There is no reason why such checks and safeguards cannot be devised as will protect the State's interest and disbursement of taxes and other public money. The dispensary has become a part of the fixed policy of the State, and as long as our present Constitution remains intact it is the duty of the Governor to see that laws governing it are enforced, and it is the duty of all law-abiding citizens to labor for the same end, or at least to submit to the provisions of the law. I believe the dispensary comes nearer to the solution of the liquor problem than any other scheme yet proposed by man. It may be necessary to modify the law, but constant changes are to be deplored. The dispensers should be honest men, selected without regard to party affiliations, and when convicted of crime, should be handled like other criminals. The chief dispenser, the board of control and all the higher officials should be men whose honesty cannot be reasonably questioned and who should hold their places on account of fitness and not for political reasons. An institution is known by its fruits, and it is simply a question whether prohibition or the dispensary system will do most to diminish drunkenness and its accompanying ills. Upon moral grounds the dispensary must stand and fall. The profit feature is of secondary consideration.

EDUCATION—THE PUBLIC SCHOOLS.
That it is the duty of the State to provide for the education of her children is now almost universally conceded. He belongs to the past, and not to the present, who hopes to check the growing demand for popular education. The enemies of the public school will find the entire drift of modern civilization against them. All the leading nations of the earth have founded and are still endeavoring to perfect systems of popular education. Witness Germany with 19 per cent, and France and England each with 16 per cent of their population in the schools. To be relegated to the rear is the fate of every State that fails to provide for the training of her children.

Witness Spain, once the leading Power of Europe, with only 10 per cent; Italy, once the home of art and science and culture, with 9 per cent; Turkey, at once the shame and disgrace of Europe, with 2½ per cent; Mexico, with 4½, and Brazil, with only 3 per cent of her population at school.

The whole history of modern civilization teaches that in the struggle for supremacy the sceptre of dominion passes not to the State most richly blessed by nature, but to the State that best succeeds in training its citizens for all the duties of life, both public and private, in peace and in war. In comparison with cold and black New England the South is a paradise. And yet it must be confessed by all fair minded men that long before the desolating cyclone of war had swept over our fair fields power and dominion were already rapidly passing to the North. We were already approaching a condition of intellectual bondage in the South. It has been estimated by eminent authority this section paid annually to the North, for many years before the war, not less than five million dollars for books and education. When New England established her free public schools and strengthened her system of popular instruction she armed herself with the power to wrest supremacy from the South, which was content with private and parochial schools, and to make good her claim to leadership far more effectually than she subsequently secured in the surrender of Lee at Appomattox.

This is said in no harsh criticism of the generation of men now rapidly passing from the stage, whose courage and fortitude were tested in a hundred hard fought fields, whose "energy made splendor amid the ruins of their war wasted homes," but for the purpose of emphasizing a truth which cannot be too deeply impressed upon the minds of the men into whose hands is committed the solemn responsibility of moulding the destiny of the State and of making her future not unworthy of her proud, inspiring past. To see our own shortcomings and to rise with firm will to correct past mistakes is the part of wisdom. Vain conceit in a State is no more to be admired than in an individual.

Our schools are not what they ought to be. In the opportunities they offer their youth for education the Northern and Western States have left us far behind, and this for reasons beyond our control. The war left us confronted by the most serious educational problem ever thrust upon a free people—the problem, it has been well said of educating three times the number of children with one-third the money. The war not only robbed us of more than 50 per cent of our taxable property, but it added, at a single stroke, to our school population hundreds of thousands of illiterate ex-slaves. In spite of desperate odds we have been moving forward, but the battle is not yet won. South Carolina has not yet regained her once proud position in this great Republic. She can never regain it until her people rising above all partisan hatred, unite in one heroic effort to make our system of public instruction inferior to none.

It is thus, and thus only, that we shall triumph in the end. We should develop our mines, build factories and improve the fertility of our soil, but our highest, our most sacred duty, now and evermore, must be to improve the quality of our citizenship, to develop the minds and hearts of the rising generation, for upon their intelligence, virtue and patriotism the destiny of our State depends.

In a monarchy in an aristocracy, a few great and good men may govern the State wisely and well, but in a government of the people, for the people, and by the people, illiteracy is a shame and a disgrace, and a constant menace to the safety of the State. All good citizens should unite in the effort to improve our public schools, to strengthen the school term especially in the country, to encourage the foundation of public libraries, to inaugurate a system of university extension that shall carry science and culture to eager minds grasping after better things,

to increase the number and efficiency of the farmers' institutes now conducted by the authorities of Clemson College.

In this great work of educating the masses I pledge my unwavering support and sympathy.

To our higher institutions of learning the public schools must look for efficient, well trained teachers. Destroy or cripple our colleges and you destroy or cripple all hope of better public schools. As a stream cannot rise higher than the fountain head, so will teaching in the public schools remain low and unsatisfactory until those who are engaged in this work seek the better to equip themselves in the higher seminaries of learning. Nor is this all. The primary school, it is said, has a right to live because it fits people for the duties of citizenship. But for what duties? To read, to write, to cipher? Does this fit for the duties of citizenship? For the lowest, perhaps, but what of the highest? Do not the highest duties require the amplest scholarship, the highest and noblest training that can be given?

Can the free school fit for the highest duties of statesmanship? Assuredly not. For the solution of great and oftentimes perplexing problems, involving peace and prosperity of all the people, the State stands in constant need of men of the highest scholarship, of the profoundest knowledge of law men whose mental grasp is large enough to sweep the whole horizon, men able to rise above local or even State interests, and to act for the common good of the people of all the States.

It is the chief pride and glory of our State to claim for her sons men whose names are forever inscribed in the history of this nation.

Such were Legare and Sims and Timrod and Hayne and Preston and McDuffie, and the great Calhoun. From her hills and valleys may there still go forth men who shall not only bless their State and nation, but humanity itself. Again does the common school train men for the professions of law or medicine? Does it equip for scientific pursuits? Does it send out expert chemists and geologists and engineers and scientific agriculturists? It can never train men for the manifold pursuits of the professions open to the ambitious youth of the State. For these we must furnish needed training in seminaries of learning, or look to other States to do for us what we should do ourselves and spend money abroad for what the State could supply.

Around such a fate State pride and patriotism alike rebel. Such a disaster would fall with crushing weight upon the sons and daughters of the poor, who would be unable to meet the expenses of an education at the North. But we are told that higher education in South Carolina costs too much. Does it not cost less than anywhere else in the world? Harvard, with her three thousand students, has an annual income of more than a million—a cost of \$400 per student, and this, too, with no account taken of the millions already invested in buildings and books and scientific equipment. And yet who will say that the vast sums invested in this great university fail to bring in adequate returns? Does Virginia complain of the \$100,000 annually spent for the five hundred young men at her University? Have not Michigan and Wisconsin and Minnesota and Nebraska and California been amply repaid for the millions in recent years devoted to higher education? A tax of \$100,000 for higher education in South Carolina means but little more than 50 cents for every thousand dollars of taxable property. Such a tax, even were there no adequate returns, is no burden to anyone. But it does bring adequate returns in manhood and womanhood. It does. I believe in the long run, pay for the investment in actual dollars and cents. There can be, there must be, no conflict between the Church and the State colleges. There should be generous rivalry, but open or covert antagonism is disastrous to the interests of both.

Colleges founded by the churches and by private beneficence have performed and are still performing a great and patriotic service, but no State should surrender to private philanthropy or denominational zeal its sacred, inalienable right and solemn duty of placing within reach of all her children the bread of knowledge. Zeal in educational work is contagious. The Church school flourishes best in those States where public spirit rallies to the support of the State colleges, or to speak more philosophically, wherever the Church is healthiest there are public institutions for the good of man find their warmest support.

Genuine Christianity enkindles intellectual life, arouses within man lethargy and creates within him public spirit and patriotism and an unflinching interest in the welfare of others. In Mexico, in Brazil, in Spain, wherever, in short, Christianity has become stagnant, there all public enterprises languish. Destroy or cripple our denominational colleges and you take from our civilization its strong, uplifting force, but destroy or cripple our State institutions and you take the road which has carried Spain, once the leading Power, and naturally, the richest country of Europe, to the rear in the triumphal march of civilization. There should, of course, be no waste in our educational resources.

CONCLUSION.
Fellow Citizens: The political campaign of 1896 is over. You have honored me as few men in South Carolina have ever been honored, and far more richly than I deserve. You gave me I say it in no spirit of vain glory or of boasting, but in profound appreciation of the honor bestowed—your gave me in the Democratic primary the largest majority ever given a candidate for governor. Both factions of the Democratic party, as the vote cast indicates, gave me warm and enthusiastic support, such as necessarily could not have been given to any factional candidate.

My constant anxiety shall be not to prove unworthy of your confidence. I am your Governor—the Governor of the whole people. Our interests are mutual. It will be base and treacherous and ungrateful on my part, and unwise and unpatriotic on your part, longer to fan the fire of partisan hatred. Our questions of public policy we cannot all agree, but when issues are settled at the ballot box we can and ought to submit to the will of the majority honestly expressed.

I beseech you to resolve, on this occasion, to bury all factional feelings and to join hands and hearts in your efforts to develop the resources of our beloved State, to build up her institutions, to promote her every interest.

In assuming my official duties I pledge you my best services. With all my strength of head and heart I shall labor for the common weal, and, in my official capacity, shall treat both friend and foe with equal consideration. I rid myself of all sectional and partisan feelings and hail you all as Carolinians. I love my native State. I love her people. I am proud of her grand and inspiring history, of the names of her illustrious sons, of the thousands of her honored dead who sleep upon every great battlefield of their country. I rejoice in the hope our future inspires, in the patriotism of our young manhood and in the self-sacrificing devotion of our young womanhood.

The inaugural address was greeted with loud applause, especially as Governor Ellerbe emphasized the declaration that he knew no party and no faction.

THE LIEUTENANT GOVERNOR.
At the conclusion of Governor Ellerbe's address Speaker Gray announced that Lieutenant-elect McGowney was present and ready to be sworn into office, and the oath was duly administered to him by Chief Justice McVey. Lieutenant Governor McGowney deviated from the custom and delivered a most happy speech, in which he said: It is not my intention on this occasion to make you any address, but I want to take this occasion and opportunity to most sincerely thank you and the good people of the State, of which I am so proud, for the confidence expressed in me.

What brief remarks I will have to make will be delivered in the Senate. I only want to say that it will be my pleasure and duty to work with the Governor in the promises he has made you, that which I know he will carry out, so that when his Administration is closed he will receive the deserved plaudits. I pledge myself to second your Governor in his every effort, to do the best that can be done for the people of the State in giving them a wise and just Administration, and I trust when his term of office comes to a close the people will say, "Thou hast been a good and faithful servant."

This happy little speech was kindly received.

Thus ended the inaugural ceremonies, and the procession returned.

Governor Ellerbe going out on the arm of former Governor Evans.

Bloodthirsty Brutes.

CINCINNATI, Jan. 21.—A special to the Commercial-Tribune from Tampa, Fla., says: Emanuel Silvero, a wounded Cuban, arrived here to-night from Key West, having escaped from Cuba on a fishing vessel. He comes from the field near Artemisa. He confirms the story of January 9th, when a Spanish band came upon a Cuban hospital near San Cristobal, containing 500 wounded insurgents, and put to death all of them, even the attending physicians. Col. San Martin's troops are raiding all that section, very seldom going into the hills near Rivera's camps. One of his bands was ambushed two weeks ago and out of forty-five men in it only three escaped. They are bloodthirsty and are credited with more murders of women and pacifics than any other band. They raided a small town twenty miles from Palacios, New Year's Day, and abducted all the women in the place, some fifty in number. Only ten of them have ever been heard from and they were recaptured by a Cuban band, January, 10.

Terrible Slaughter.

THOMSON, Ga., January 19.—Mr. Churchill, of Warren county, formerly of Missouri, arrived in Thomson yesterday evening with a carload of stock from his stock farm in the west. He started for his home at Woods, Ga., with his stock last night and just as he got out of town the road he was traveling, running parallel with the Georgia railroad track, and started up, it about this time a down freight train was approaching and ran into the stock in a cut, killing fourteen mules and horses, all but six that he brought. They were lying on either side of the track for about one hundred yards. The stock were appraised at eleven hundred dollars today.

Three at a Shot.

BELLAIRE, O., Jan. 16.—A triple murder occurred last night at Flat Rock, W. Va., a few miles South of here. Jesse Russell, Elmer Moore and John Greer went to the house of Lem Grim, where a dance was in progress, and attempted to interrupt the festivities. Grim ordered them away and a fight ensued. Going into the house, Grim secured a shotgun and fired at the men. Russell was shot in the breast and the other two men in the back as they started to run away. All three died in a short time. Grim gave himself up.

A Convenient Invention.

An Orangeburg farmer comes to the front with a new invention in the shape of a Lubricator for oiling vehicle wheels without taking them off the axle. It is inserted in the hub between two of the spokes. When you want to grease your wheel you have to do so with a spray and put as much oil as is needed on the axle. Upon being released the spring closes up the oil hole until it is opened for oiling up again. It is a very ingenious and clever device, and is bound to be used generally. With these lubricators a vehicle can be oiled up anywhere along the road in less than one minute. The patent for this valuable invention is owned by the National Lubricator Company of Orangeburg, S. C. Mr. Jas. L. Sims, Editor and Proprietor of the Orangeburg Times and Democrat, is the manager of the company, which is a guarantee that it is all right. The company wants an agent in this county to sell the Lubricators. See advertisement in another column.

Pianos by the Mile.

See Ludden and Bates' new advertisement of one thousand Mathushek pianos. Suppose them all loaded on to wagons in one grand procession, allow 15 feet for each wagon and team and the line would be nearly three miles long. That is just the wholesale way this great southern house does business. Having acquired an interest in the noted Mathushek Piano factory, they are now supplying purchasers direct and saving all intermediate profits. This means a saving of from \$50 to \$100 on each piano, and the securing of one of the oldest and most reliable instruments at a remarkably low figure. Better write them at Savannah, Ga., or at 93 Fifth Ave., New York City.

PLANTERS, ATTENTION!

Valuable Information for All Classes of South Carolina Farmers and Stock Raisers.

Knowing that the time has now come for you to purchase your fertilizers, we put ourselves to the expense of paying for the publishing of the following information for your use. We have done this for years past, and now there are hundreds of planters all over the State that can testify, not only how much money we have saved them but as to the good crop results they have gotten. We do not sell acid phosphate or kainit, but we do sell Cotton Seed Meal and Hulls. As we pay the expense of this advertisement, all we ask of you in return is to ask your dealer for the Southern Cotton Oil Co.'s Meal, for either feed or fertilizer, and for our hulls for cattle feed.

HOW TO FERTILIZE.

This is what many of our personal friends have tried, and is the language and advice of the Agricultural Department of Georgia:

1st. Beyond a certain amount it did not pay to manure—that is, while the crop might be increased in gross, after a certain outlay had been made in manures, further increase diminished the relative profits.

2nd. That this holds good, as well, for nitrogenous manure, phosphates and potash—no matter in what form administered.

3rd. That all things considered, the cheapest and most profitable fertilizer the farmer could use, by actual test, consists of the following formula:

Acid phosphate.....1,250 lbs.

Cotton seed meal..... 500 lbs.

Kainit..... 250 lbs.

4th. That the point of greatest profit is passed after applying more than 400 pounds per acre. This formula would analyze.

Available phosphates.....9.00 to 9.50 per cent.

Ammonia.....2.25 to 2.50 per cent.

Potash.....1.25 to 1.50 per cent.

We cannot calculate the actual cost of this fertilizer, for prices vary from time to time and the rate of freight varies, but suppose cotton seed meal costs you \$23.00 per ton, acid phosphate \$12.00 per ton and kainit \$14.00 per ton, all freight paid to your station, we have:

500 lbs. cotton seed meal at \$23.00

per ton.....\$5.75

1250 lbs. acid phosphate at \$12.00

per ton..... 7.50

200 lbs. kainit at \$14.00 per ton. 1.75

2000 lbs. one ton; total cost.....\$15.00

Thus you see that you could put 400 pounds per acre at a cost of \$3.00 per acre, or 200 pounds per acre at a cost of \$1.50 per acre.

Now the planter has gotten this year an average price of 15 cents per bushel for cotton seed. He usually puts 20 bushels of seed per acre, which at 15 cents per bushel makes a cost to him of \$3.00 per acre to fertilize. In addition to this, he buys acid and kainit to put with the seed. It is for you to say whether you would rather have 200 bushels of cotton seed per acre or 400 bushels of the above fertilizer which every 20 bushels of seed you have sold this year will enable you to buy.

FATTENING CATTLE.

On this subject we do with you as in our article on fertilizers, namely—publish the advice of distinguished parties, people supported by the planters of the various States for the purpose of finding out what is to your interest. We can tell you, that only five years ago every pound of hulls were burned by the oil mills in this State as we did, not then appreciate their value as food. Now over 20,000 tons of hulls are sold in this State alone for feed.

"For fattening cattle for the beef market put from four to five pounds of meal with twenty pounds of hulls. Below we quote the advice of State authorities."

Sir John Lawes says (see State New Jersey Agricultural Report, 1885):

"Surprise is often expressed at the much higher prices which English farmers pay for linseed and cotton cake or meal as compared with corn, but the reason is to be found in the much higher manure value of the meal. I have often wondered at the high prices which the United States farmer appears willing to pay for nitrogen in artificial manures, when he might obtain these manures at a much lower cost by simply feeding cotton seed cake or meal. The nitrogen contained in these goods, with the exception of the small amount retained by the animal, passes into the excrements in the form of organic compounds of nitrogen. These compounds nitrify in the soil with very different degrees of rapidity. A certain portion of those found in the urine nitrify very readily while some of those in the solid excrements may remain for several years in the soil. Experience has shown that when these foods are used upon a poor soil for the first time their effect is not at first what it becomes later on when they have been in use for a few years. This is due to the slow decay of some of the compounds. A crop grown by the eighth application of meal may in part be grown by small portions of the meal used in each of the previous seven applications. The ultimate decay of organic substances in the soil must depend therefore, upon a great variety of circumstances, and our own experiments at Rothamsted supply numerous instances of the very long period which may elapse before some manures cease to produce an effect upon the crop to which they have been applied."

FATTENING THE STOCK.

How It Increases the Income of Louisiana Farmers.

The following address was delivered by Prof. D. N. Barron, before the Louisiana State Agricultural society at Lafayette, La., Jan. 23, 1896:

Mr. President, Ladies and Gentlemen—The subject of "The Fattening of Stock as an Adjunct to the Income of Louisiana Farmers" is one in which I take great interest. It has grown to be the custom for oil mills and wealthy individuals to purchase each fall a number of cattle and fatten them for the market. But this is only done by wealthy parties, and the idea seems somewhat to prevail that it is only profitable when done on a large scale. My observations are, that not only is this supposition erroneous, but, on the contrary, the oil mill or individual who fattens on a large scale is able to reap a much smaller profit than he who feeds a few head on his farm. The reason for this fact, I trust, will be apparent before I have finished this paper. Last August it was my privi-

lege to read a paper before the North Louisiana Agricultural association, at its annual campmeeting fair, on "The Possibilities of Louisiana as a Stock Raiser," and although fairly familiar with her resources, I was astonished at the overwhelming evidence of the capabilities of our beloved State to produce food for its stock. If we can only convince ourselves of the fact that there is not a square foot of soil in this State that is not able to contribute largely to the feeding of stock, the day will not be far distant when the immense stock-raising of the west will be things of the past and Louisiana, instead of Texas—New Orleans instead of Chicago—will be the great raiders and packers of meat in the world. But my mission here today is not to convince you that our land is adapted to the raising of stock, but to show how the fattening of cattle can be made to contribute to the farmer's income.

Looking around at our brethren in other sections we find that the custom of fattening a few head of cattle each fall is no new thing, either to our cousins of the west and New England, or the agriculturists of Europe. The English farmer strives to raise all the rough feed he can. In the fall he buys a lot of American cattle, buys our oil cake and, taking all home, settles down to put flesh on American cattle with American cake and English roughness. When his sale is made, after footing accounts, he frequently finds him the cost of his cattle and their feed, yet he is well satisfied, for he considers that he has made ample profit in the increased size and value of his manure heap.

I know no better way of illustrating the profits to be derived from fattening cattle than to call your attention to the results obtained in the State experiment station at Baton Rouge during the last two years. In order to test this very question the station has for the last two years fed small herds of cattle on a ration of cotton seed meal, cotton seed hulls and centrifugal molasses. The animals selected for the test were chosen for their unfitness for fattening. They were scrubs whose day of usefulness as work oxen had long since departed, it being argued that if anything could be done with this class of animals, then there was no doubt of a profit to the man who would select his animals. Without going into details, here is the financial statement.

FOR 1894.

To purchase of six animals

(4,642 pounds) at 1½

cents.....\$81.23

To 11,821.5 pounds food,

at 43 cents per cwt..... 53.05

Total cost of animals at

time of sale.....\$134.28

By sale of six animals

(5,585 pounds) at 4 cts.

Profits..... 32.27

Or 24 per cent on the money invested

in six weeks. These results were

obtained with meal at \$20, and hulls

at \$5 per ton, and molasses at 12 cents

a gallon.

The next year's results were even

more favorable:

To purchase of five ani-

mals (3,320 pounds) at

1½ cents.....\$58.10

Cost of feeding same for

six weeks..... 28.72

Total cost of animals at

sale.....\$86.82

By sale of 4,402 pounds

of beef at 3.15 cents....

Profits.....\$51.93

Or 50 per cent. The success in this

instance is due to several causes. First

of these is that the meal used cost only

\$14.00 a ton, and the animals sold for

15 of a cent higher. The second reason

is that the animals were of a

somewhat better class than those in

the first lot, and laid on flesh more

rapidly, making an average gain of

216 pounds each, against 157.

This is the point at which the mill

and speculators are obliged to stop

counting their profits, but a farmer

who knows his business has a further

source of revenue unaccounted for in

the above figures. In the year book

for 1884, published by the United

States department of agriculture, it is

estimated that the manure of a well-

fed ox of 1,000 pounds is worth \$29.27

per year. The animals in the above

experiment would average about 800

pounds, hence their manure for the

six weeks was worth the first year \$17,

and the second year \$14. This would

give a profit to the farmer of \$50.27 in

the first and \$65 in the second experi-

ment.

The figures given above are the re-

sults of actual trials. The food and

cattle were bought at market prices,

and the cattle were sold for what they

would bring. They never were choice

animals, but to show what improve-

ment they made, it is sufficient to

state that in several instances they

were repurchased at the advanced price

by the parties who sold them to us.

But it is to the latter part of our estimate that we should direct our greatest attention, for it is the value of the manure that should constitute the raiser of value to the farmer; and by the proper utilization of which he can practice more true economy than in any other way. With virgin soil of almost inexhaustible fertility we continued to raise our crops for years without returning anything to the soil. We have been like the poor man, who, suddenly acquiring a fortune, scatters his money broadcast, forgetful that, though large, he is spending his capital. Like him, we have suddenly awakened to a realization of this fact when our capital is almost gone. This is proven by the steady increase in the sales of commercial fertilizers. But attempting to replenish our capital in this way is like attempting to fill a barrel through the bung while the spigot is open. We must first stop this waste. Where is it? Every ton of hay we sell from our farms contains thirty-eight pounds of fertilizer that it will cost us \$1 to \$5 to replace.

Every ton of corn 38 pounds, worth \$8.50. Every ton of oats 43 pounds, worth \$7.50. A 500-pound bale of cotton in the lint 51 pounds, worth \$34, and 1,000 pounds of seed 53 pounds, worth \$5.50. How are we to stop this waste? The Almighty has given us a machinery, by the use of which this can be done and yet a profit made on the machine itself. Live stock of the farm are so constituted that they are able to convert roughness into a fine manure. A substance which is not only as good a fertilizer after passing through an animal, containing all the elements of plant food it originally contained, but is actually improved by this process, for its constituents are thereby rendered much more easily available to plants. The

elements utilized by the animals are largely carbohydrates and fat and not phosphoric acid and potash, for which we pay in commercial fertilizers. The animal also uses nitrogen. But for every article so extracted from the food, a corresponding amount is released from the body. Hence whether we sell our farm products or, after feeding them to our animals, fail to take proper care of their manures, our farms are just that much poorer.

But some one asks, how shall we care for the manure? In order to better answer this question, let us first inquire what manure is, and how it is formed. The object of adding manure of any kind to a soil is either to supply a natural deficiency of that soil in the elements of plant food, to return what we have taken from it, or to increase its fertility. A manure must, therefore, contain these elements of plant food. While the substances necessary to supply plant food are numerous, fortunately for us, they nearly all exist in nature in such abundance that they are practically inexhaustible from any soil. Nitrogen, phosphoric acid and potash, however, form notable exceptions to this rule; hence the chief object in manuring is to supply these, and no substance is of any value as a