SOUTHERN PLANTER
(1882)

VOL. 45
1884

MISSING: NO. 2-3, 6-7, 9, 11

THE

SOUTHERN PLANTER

DEVOTED TO

AGRICULTURE, HORTICULTURE, LIVE STOCK AND THE HOUSEHOLD.

Office, 26 Wilkerson's Hall, Ninth Street.

T. W. ORMOND, - - - - - - PROPRIETOR.
W. C. KNIGHT, - - - - - - EDITOR.
W. C. JACKSON, - - - - - - ADVERTISING AGENT.

45th Year. APRIL, 1884. No. 4

CONTENTS:

Richmond: J. W. Fergusson & Son, Printers.

ORGANIZED 1832.

—THE—

Virginia Fire and Marine

INSURANCE COMPANY,

OF RICHMOND, VIRGINIA.

ASSETS, - - - $557,000.00.

Insures against Fire and Lightning.

HALF A CENTURY IN ACTIVE AND SUCCESSFUL OPERATION.

VIRGINIA FIRE AND MARINE INSURANCE CO.

A HOME INSTITUTION.

This old Virginia Institution offers solid security to those desiring Insurance. The Company has paid **Hundreds of Thousands** in losses in this State, and nearly **Three Millions** in all parts of the country.

All Descriptions of Proprrty in Country or Town—private or public—insured at fair rates and on accommodating terms. Agencies in every county and city.

DIRECTORS.

W. L. COWARDIN, - - - PRESIDENT.

E. O. NOLTING,	E. B. ADDISON,	G. W. ALLEN,
W. S. DONNAN,	THOMAS POTTS,	D. O. DAVIS.

Home Office, N. 1015 Main Street. Richmond, Va.

W. L. COWARDIN, President.

WM. H. McCARTHY, Secretary.

☞CORRESPONDENCE SOLICITED.☜

—THE—

SOUTHERN PLANTER.

DEVOTED TO

Agriculture, Horticulture, Live Stock and the Household.

Agriculture is the nursing mother of the Arts.—XENOPHON.
Tillage and pasturage are the two breasts of the State.—SULLY.

T. W. ORMOND, - - - - - - - - PROPRIETOR.
W. C. KNIGHT, - - - - - - - - EDITOR.

45TH YEAR. RICHMOND, APRIL, 1884. No. 4

PEA-FALLOWS.

SUNNY SIDE, Albemarle Co., Va., March 1, 1884.

Editor Southern Planter,—I observe in the *Planter* for March a letter from Mr. J. J. Ambler, of Amherst county, making enquiries about pea-fallows. As Mr. Ambler lives, as I do, in the Piedmont country, and as I have had several years' experience with pea-fallows, I will with pleasure give him the result.

Let me premise by saying that where the land has "heart" enough to produce a fair crop of clover, I would not use peas, but would depend on clover, plaster, and bone, or South Carolina phosphate. But much of our land in Piedmont Virginia has been so worn out as not to produce clover—for such land my remedy is rye and pea-fallows. I can best illustrate the beneficial effects of a rye and pea-fallow from an experiment made by my son, at that time my manager, and myself. In the year 1879, I purchased fifty acres of land one-half mile west of the University of Virginia. Much of this land had been cleared many years since. It was rather thin originally, had been cultivated until it was regarded as quite poor, and had been *turned out* for some twenty years. It was covered with hen-grass and broom-straw, and much of it had a considerable growth of old-field pine and sassafras. The

largest of the pines were from six to eight inches in diameter. In the Winter of 1879–80, we had all the pines and sassafras cut up, removed from the land, and used for fuel. The smaller bushes were grubbed up and, along with the brush, were burned on the land. In March and April this land (about twenty acres) was plowed up with a three-horse plow, harrowed and planted in corn. The corn being manured in the hill, with a mixture of ground bone and rich earth, we did not expect much corn, but it was well cultivated and the land was made clean. We cut up the corn near the ground in September, and shocked it in the field. It gave about three barrels per acre. We never pull fodder or cut tops. The land was then flushed up and one bushel of rye per acre was drilled in with about 200 pounds of ground bone and rich earth. About the last of May, 1881, when the rye had headed and was beginning to bloom, it was turned under with a three-horse plow. Black peas were then sown at the rate of about one bushel per acre. In September we gathered some twenty-five bushels of peas, and the vines and peas not gathered were turned under with a three-horse plow. The Summer of 1881 was quite dry, and the pea vines made a poor growth and bore a small crop. After the peas were turned under the land was seeded to wheat, using a drill, and sowing with the wheat about 300 lbs. per acre of the ground bone and rich earth, or fine manure—the manure being the sweepings of the barn-yard in the Summer; the earth and manure are both run through a coarse sifter, and the coarser particles thrown out to prevent the drill from being choked. In March, 1882, clover was seeded upon the wheat, and an iron segment roller was run over the wheat field. The wheat crop produced about ten bushels to the acre, and there was a good stand of clover. In the Spring of 1883, we gave the clover a dressing of plaster, and in June cut a fine crop, and have no doubt of a good crop this year. We did not do—what all farmers should do—keep an exact account of the cost and income, but we are satisfied that the corn, peas and wheat more than paid all expenses for labor, seed, and fertilizer. We have the clover crop, which we have sold for fifty cents per hundred weight in the field, as clear profit; and the land is now worth at least twice as much for agricultural purposes as it was when we took it in hand.

The experiment above described is not the only one we have made, but I give that as the best illustration. We have now fifteen acres of thin land in rye, which will be turned under in May, to be followed by peas, wheat, and clover.

The process above may seem slow, and if Mr. Ambler has a good balance at his banker's we can put him upon a plan to improve his

land much more rapidly; but if his condition is like that of most of us, his motto should be "hasten slowly," and, I will add, surely.

We greatly prefer the *black pea*. It is much richer than the *black-eye*, and has much more vine. They can be had in Richmond, and range in price from $1 to $1.50 per bushel. As we have raised our own peas for several years, I have not kept up with the price. It is too late in the season now for Mr. A. to follow the plan suggested above, and I would suggest this plan: Go to work at once and clear up some fifteen or twenty acres; work on this whenever it is too wet to work on the land in cultivation; have the wood cut off and use it for fuel, thus saving his timber. *Leave all* the brush upon the land. Get from Richmond some five bushels of black peas. About the middle of May drill these peas in drills about eighteen inches apart upon land in fair condition; work between the rows with a cultivator once on twice. These should furnish him with all the peas he will need next year. About the middle of August haul off the brush and spread upon thin spots near. Plow and sow rye, to be followed next year with peas of his own raising, and wheat and clover as indicated above.

I will add a few words as to the value of brush—especially brush with all the leaves on—as an improver of thin land. We have been for several years in the habit of clearing up our branches and fields in August and hauling the brush and weeds upon thin spots. We think that a good covering of brush is about equal to a top dressing of manure. From an observation of several years I am satisfied that the ameliorating effects of the brush and leaves far exceeds the effect which would be produced by the actual amount of vegetable matter in the brush and leaves. If this be true, then why is it? I am no chemist, and it is probable that the conclusion to which I have come will appear absurd to the "scientists," yet I will venture to give it. We are told by the highest authority on agricultural chemistry, that although the atmosphere is charged with nitrogen, plants cannot take up nitrogen directly from the atmosphere; but we have reason to believe that clover and some other plants contain more nitrogen than would appear to be present in the soil upon which they are grown. Now, the effect of the use of brush and leaves upon thin land I think can be accounted for in this way: The brush and leaves shade the land and keep it moist; the leaves, as they fall off, afford a small amount of humus; we then have shade, moisture, and humus. Now, the atmosphere penetrating this mass is charged with nitrogen; may it not be that some nitrification of the surface soil takes place under these circumstances, and would not this nitrification of the surface soil account for the very benefic

effect of the brush and leaves? But may I not go a step further. The clover plant shades the ground and preserves moisture; this shading commences so soon as the plant begins to grow, as its tendency is to spread out—as well as up—wards. May not this shade and moisture cause a slight nitrification upon the surface of the soil? The nitre thus produced is soon absorbed by the earth, and then taken up by the roots of the young clover plant. This causes additional growth, and this additional growth produces additional nitrification in the surface soil. Thus the plant itself, whilst not absorbing nitrogen directly from the atmosphere, is *Nature's* own beautiful laboratory for evolving from the surrounding atmosphere and depositing upon the soil the very food most needed for the development of the plant.

I have written more than I intended; my hope is that what I have said as to the value of brush, weeds, and straw as fertilizers, may induce our intelligent and observant farmers to preserve and spread upon their thin lands much material which is now permitted to go to waste.

Yours, &c. R. T. W. Duke.

DRILLING WHEAT PREPARED TO PREVENT SMUT.

To the Southern Planter:

I notice in the February issue of your journal R. E. Bridgforth's article recounting his difficulties last Fall with his wheat drill, and the more serious troubles of his neighbor, Dr. W. C. Booth; with each the machine failing to sow wheat blue-stoned and limed as anti-smut. The writer calls for experiences in that article. For the last eighteen years I have use a drill, but not the "Pennsylvania," without irregularity of distribution or annoyance of any kind, preparing the seed much as Mr. Bridgforth does; my method differing from his only in this, that *I* pour six or eight bushels upon a floor and sprinkle upon it strong blue-stone water, stir this heap well up, and dry with all the air-slacked lime the berries will hold, adhering to them: he immerses in blue-stone water and skims off the floats. By the time we can bag in my way and reach the field, it is dry enough to go well through the drill, using the four-peck wheel, which will deliver this partially swelled grain a little less than it is guaged for. In this eighteen years I do not remember seeing one smutty head. I am acquainted with the drill used by Mr. Bridgforth only so far a concerns the mechanism for sowing guano. This I thought nearly perfect, while that to my drill is faulty. I did not look into the wheat-sowing arrangement because I supposed all on the

market were good, now that the drill for seeding wheat has been so long in use. It is likely the manufacturer can give him directions for avoidance of his former trouble; for surely no machine of the reputation of the "Pennsylvania" would be built upon principles preventing the sowing of wheat fixed as Mr. Bridgforth's was, when it is so well known that smut is only kept off in this or some other kindred way.

WM. F. JACKSON.

PEA AND GREEN FALLOWS.

Editor Southern Planter,—Agreeably to your request, I will give you what little I know about green fallows. My mode is first to sow rye or oats in the Fall; let it grow, and as soon as headed in May, I fallow in; then sow peas on the rough land, then drag in; but I always use lime on the land when I fallow in the peas, unless it has a plenty in the soil already, at the rate of thirty bushels per acre. By this mode I have made poor land produce twenty bushels of wheat per acre and a good stand of clover. A better plan would be to apply 200 pounds South Carolina fine bone and 200 pounds of kainit just before seeding the peas, then a light dressing of plaster, when the peas get six inches high; and use lime with the pea fallow in Tidewater Virginia; the mountain counties having lime-stone in the land, would not need the lime I imagine. The peas should be sown early in May—one and a-half to two bushels per acre, and let them grow until about half the pods are ripe; hire women and boys to pick for five cents per flour-barrel full of pods, and you will save all you need for seed, plowing the balance in. Norfolk is the best market to buy in. Most any commission merchant can procure them, and the sooner bought the cheaper. There is no doubt in my mind that green fallows are a great help, even oats, corn, or peas; and I have heard a very reliable farmer, in fact two, assert that they had tried corn along-side of peas, and were surprised to find better results from the corn.

F. GUY.

Manchester, Va.

MANY think themselves to be truly God-fearing when they call this world a valley of tears. But I believe they would be more so, if they called it a happy valley. God is more pleased with those who think everything right in the world, than with those who think nothing right. With so many thousand joys, is it not black ingratitude to call the world a place of sorrow and torment?—*Richter.*

AMONG mortals second thoughts are wisest.—*Euripides.*

[For the Southern Planter.]

THE TWO LEONARDS.

Mr. Editor,—At the commencement of this century, in a plain stone house, on the Long Glade, a small tributary of the North river, that runs out of Augusta and unites with it just below the village of bridgewater, in Rockingham, and that strikingly resembles that historic mansion at Valley Forge, we wish we had time to tell you about, there lived Captain William, and his brother Francis Ervin. The first was a long time as an elder—the clerk of the session of Mozzy Creek Church. Each raised a large family, and jointly farmed the acres of the paternal farm. To their lasting credit—a memorial of each—a harsh or unkind expression was never heard from any member of the one family towards any member of the other. All this as an introduction, and, in one sense, apposite to the subject in hand.

There will be observed by the traveller over the old turnpike that connected Staunton and Scottsville, as he journeys from Rockfish Gap towards the former, two attractive looking white houses. They shelter John and Edward Leonard. The first, nearest the road, has a wife and an adopted daughter; the last a small family. They were raised a few miles east of their present home, and are two of perhaps seven brothers. John went through from first Manassas, to Appomattox, as a *good* soldier in Captain Wm. Patrick's company in the First Virginia Cavalry. Edward was a member of Mosby's command, and all knew the character of his following. We do not know how long they have been the joint owners of the one hundred and forty acres of land (twenty in timber) which they own and farm together. But about five years ago determining to build, there being a small cabin and a barn that escaped the burning of the house of the former owner. To show the good sense and economy that characterizes *all* they do, we will mention that they hied away, five or six miles, and with their team hauled logs from the land of a farmer, favored with pine timber of excellent quality, to a steam saw-mill, and got their lumber without a dollar cash in the outlay. John's house, the largest, has eight rooms and two dry cellars; the one for fruit, canned goods, &c., is *dark*, a *sine qua non*, and free from frost. His house cost him from $800 to $1,000 in cash. The entire farm is well fenced, the most of it on the lane, with plank; the worm fence encloses the balance. The yards and gardens are substantially and tastefully enclosed. The fields are clear of stone, briers, &c.; fence corners clean; not a rail down or out of place. About the out-buildings, barn, &c., everything in place and presenting a neat ap-

pearance. The team of four or six horses, as the occasion arises to use six, it is conceded by their neighbors to be equal to any, if not the best, in the county. And there are yet a few among your oldest citizens who will recall the character of *Augusta* teams near a half century ago. We may recur to what they were on the occasion of Daniel Webster's big speech on the 5th of October in 1840, when there was perhaps near a half a hundred from our old county present. Gen. Bernard Peyton, who will be recalled as one of the polished and most popular men of that day, was the Chief Marshal, and, at his suggestion, coupled with the entreaty of Lewis Webb, John Thompson and others, the *finest* team was selected, the Augusta farmers being the judges, and I regret I can't now recall the owner's name, for a place in the grand procession. The farmers, in "their Sunday-go-to-meetings," and their wagon-whips under their arms, as the badge of their honored profession, filled the wagon. And I tell you, friend Knight, they were the observed of all observers. I am not sure that it wasn't Mr. Charles B. Trimble who drove the fine team; at any rate, it was his ready wit and repartee that somewhere caught the ear of that sterling old merchant, "Lewis Webb," who deserves a monument at the hands of his fellows, when Trimble designated his load as "the silk-stocking gentry." On the morning he was leaving the city, Webb called him to his store and presented him with a neat package, addressed to "Mrs. Trimble and her daughters." On opening it, there was found a pair of the nicest silk *hose* for each. Pardon this running off, as it was Leonards' fine team ran away with me.

In brief, every thing on the farm and the premises of each has a place, and is always in it. The stock—horses, cattle and hogs—are in fine condition, and if the big, plump, fat hens are an indication of *hen-fruit*, it must be plenty. Then, the bee-hives are numerous, and look well cared for.

But the crops do them great credit. The wheat crop approximates *thirteen hundred bushels*, and the corn in the same ratio, whilst the hay, at a safe estimate, is one and a-half tons per acre. Their wheat is looking remarkably well. But I must not forget to mention that their sound judgment and observation taught them the benefit of lime, and years before they built their houses they erected a pair of well-constructed kilns, and have used lime ever since, and concur fully with the best educated farmers of Pennsylvania in its application always on the *sod* if possible. By the way of parenthesis, we think you might do well to publish a series of letters from Pennsylvania in January, 1852, your unworthy correspondent addressed to your illustrious pre-

decessor (that Madame Rumor says has been hid away somewhere in the basement of the Capitol, with a teat of some sort he is industriously milking) that treats of the construction of kilns and the application of lime. These gentlemen are closely observant, and say that they find a difference in the space of a hundred yards in the character of the lime-stone, both in its burning and character of the lime, as also in its effect on the land. In evidence of their thoughtfulness in quarrying for the kiln, as for burning, a fine stone, suitable for building, was put aside, so that when ready to build, the stone for the foundation was *ready*. I had occasion to see one of them the other day, and it was the evening of the 29th February, when the mercury was at zero night before, and Jack Frost wouldn't let you forget there was a pair of flaps to your knowledge-box—usually called *ears*, where, think you, did I find them? Roasting their shins around the fire and enjoying "*otium-cum-dignitate*," with a mug of the nicest boiled cider, we presently tasted, between their digits? Not a bit of it, but away off, in a forest of four hundred acres, belonging to a neighbor, where, to keep them out of mischief, as we are somewhere told "an idle brain is the devil's work-shop," I found them preparing a watering-trough for their horses. I do tell you it was a trough, and with the help of a third man, three days were consumed in constructing it. It was out of a mammoth of the forest—a white-oak, three feet or more across the stump, and before reaching them, my attention was arrested by frequent clumps of that useful, durable, valuable and much-abused tree, the *ailanthus*, away out in the dense forest; you know it is domestic, and I was greatly puzzled to account for its growth there. Yet, on enquiry, found that Gen. Wharton's brigade *camped* for weeks in that forest during the war. Do you know, friend Knight, it brought up sad reminiscences, and as I looked on the several tall, graceful, lithe trees, me thought of them as mementoes, memorials, if you please, of many a brave member of that regiment that sleeps, it may be, in an unknown grave.

I couldn't but connect our friends, the Leonards, with that other esteemed friend, whose comfortable stone mansion stands almost forninst that classic spot, that is marked by the ruins of the *third* Opequon Church, and which was almost within the centre of the battle of Kerns-Town. I refer to the Rev. Wm. A. Crawford, who, you once told me was very happy, might I say adroit, in coupling agriculture, as represented by the silo and osage orange hedge, with Sunday-schools and the Concordance.

I said to them, I wished they could see friend Crawford's farm, as all they wanted to make theirs perfect, was to follow his lead in adopting

the "silo and hedge." I am sure that my friends here stand at the head, as among the best farmers in Augusta, as our friend Crawford does in Frederick. OCCASIONAL.

ENSILAGE FOR EASTERN VIRGINIA.

Mr. Editor,—I have been using ensilage for three years, and commenced the use of it with many doubts of its value, but after thorough experiments with it, I think it invaluable for dairy cows, also for calves, and I have come to the conclusion that there is no reason why dairying can't be made a most profitable business in Eastern Virginia. My cows fed on ensilage give as much milk as they do in Summer on grass, and I think richer and most palatable milk; and the quantity of butter made is in proportion to the milk. It is said that the best dairy cows now go up to 750 pounds butter a year, but let us take the half of it, or 300 pounds per annum; and surely that is not a high estimate for well-fed cows; and you have, at thirty cents a pound, ninety dollars a year from each cow. I'm told the labor of the dairy is heavy and must be conducted with care and skill. I would ask what industry of this age can be made to pay without care and labor (there is the trouble; our Virginia people expect to live easy without either work or skill)? And it would seem to me that the calf from the dairy cow and the skimmed milk to the pigs can be made to pay for all the additional labor of the dairy over that of feeding and grazing beef cattle for market. Three hundred pounds of beef is a full average of weight put on by good feeding; at seven cents a pound, makes a profit of twenty-one dollars on the animal, while 300 pounds butter, which the dairymen say can be made with the same feed that makes the 300 pounds beef, is worth thirty cents a pound, or ninety dollars a head. Then I contend that the calf and pig pay for the additional labor of *butter-making*; both have to be provided with food and fed. Now, where is the *balk?* Is it in making the silo? One that will feed ten cows cost me sixty-seven dollars; that is a permanent investment; one that will last fifteen years, even if walled with timber. Mine is walled with stone, but that is not accessible to many farmers in Eastern Virginia. Ten acres of good fodder-corn will fill my silo, and that will amply feed ten cows. The cost of planting and raising and securing that forage is not greater than securing corn and forage to feed ten head of beef cattle, one yielding at least ninety dollars a cow, say nothing of the calf and pig, and the other twenty-one dollars a steer, with

no prerequisites to fall back on. Now, where is the difficulty? It seems to me to be in preparing the product for market and getting it there; and, my word for it, if you will give it to the lady of the house, be she wife or sister or who, she will make it pay in the house comforts, and if on a large scale and the farmer will attend to it, ten cows will bring him in a revenue of $900 a year less the consumption of the family. And, supposing no revenue *in money* is required or demanded, is there anything that will pay better than to have plenty of milk and butter in a family and a surplus for the housewife to sell rather than feed merely to keep alive the same number of cows and to have barely milk enough to put in the coffee, as is too often the case in Old Virginia? I would advise the use of silos and ensilage as I use it, only for family comfort; even if annual revenue is not required, or if the farmer has not enterprize enough to utilize it, there is nothing that will pay better. I write this thus early because the ensilage ground and the silo should be determined on early in the season. The fodder-corn should be planted in May on as many acres of good land as you wish to put cows in the dairy, and the silo should be made ready not later than August—a pit dug in the side of a hill and walled up with stone, if you have it; if not with timber (that is studs and plank), covered with a common board or straw or fodder roof to keep out the water. I have never seen any food better for breeding ewes, that will produce more milk and make lambs early for market than ensilage. Then why can't our Tidewater young men, on land and in a climate especially suited for fodder-corn, work up these two industries to equal anything that can be found in Texas or the West, far away from any social enjoyment that makes the man of worth and the man who builds up his State and his country, take hold of this industry and succeed in it? There can be but one reason, because it seems enterprising, far better say adventurous, to leave home and friends and our Old Mother Virginia, that thus far nursed them and has produced more good men than all the other States combined, and go to some inhospitable clime to eke out a precarious living with the occasional chance, one case in fifty, of rising to the surface and making a man, or come back to the Old State, as most young men do, having lost the time, labor and privation in the experiment. I can't see why Eastern Virginia, in close proximity to the large cities of the Union, and which, on the sea coast, must rapidly increase, the home of Indian corn, the best plant known for ensilage, can't be made the greatest dairying- and lamb-producing country on this Continent.

Please excuse this hurried scrawl and abrupt conclusion, as I am just

called to Washington to advocate our enterprize before Congress for the extension of the Signal Service to agriculture.

Hastily yours, ROBERT BEVERLEY.

P. S.—I did not say above how to produce the ensilage. My plan is to plant, say ten acres (or as much as you can make rich), in fodder-corn about the 15th of May in rows three feet wide and about two grains together, twelve inches apart, in the row; plow it twice and cut and ensilage it when in full roasting-ear state, say 15th of August. As soon as you cut off the corn-fodder sow the land down in rye, and it will get a good growth and afford excellent pasture for your calves or yearlings all winter. Turn them off 15th of April, and by 15th May you will have a good green fallow to turn under for your next crop, and if possible put the manure from the ten cows on it also, and you will have to enlarge your silo for next year.

"ILLITERACY" IN RELATION TO FARMING.

The article in our columns from the *Husbandman*, of Elmyra, N. Y., is intended to prove by statistics taken from the tenth census, and from the report of the Department of Agriculture, that "illiteracy" bears fixed relations to poor farming, as intelligence does to better farming. There can be no doubt that the diffusion of knowledge among our farming population leads to more abundant crops and greater prosperty. We are in full accord with the *Husbandman* on that point, but we think the mode of reasoning by which he endeavors to prove it fallacious, and his tables and figures deceptive.

He selects Indian corn as the crop on which to base his reasoning, as one that is universal. Now although Indian corn is planted all through the country, it is a well known fact that this crop is more prolific in grain in the cooler regions of the Middle and Northern States than it is under similar treatment further South. Soil and climate affect its productiveness—not "illiteracy."

It so happens that the five Southern States comprising the cotton belt, and lying very much in the same latitude, where the soil is light and well adapted to cotton but not to Indian corn, are also (from obvious causes) those in which there is the largest percentage of illiteracy. No doubt illiteracy is a serious impediment to the best results, but clearly in this case it is soil and climate that affect the productiveness of the crop.

If it were possible suddenly to interchange the entire poulation of any two of the extreme States—say South Carolina and Iowa—there is no doubt that the Iowa corn crop made with South Carolina's "illiteracy," amounting to forty-eight per cent. of her population, would far exceed that of the crop of South Carolina made by Iowa's population where the "illiteracy" only amounts to 2.4 per cent. And this simply

because the soil was better and the climate more suitable for grain crops.

We are as strong advocates of a higher order of intelligence among the farming population as the *Husbandman*, believing fully with increasing knowledge there is increased farming prosperity, but the selection of a particular crop for comparison which is naturally more prolific in a higher latitude, does not help to prove it.

With the same results we could select the Irish potato crop, or wheat, or cabbages, or apples, all of which do better in cooler regions, without regard to the intelligence of those who cultivate them. Sweet potatoes are planted in all the Middle and Northern States. With equally good seasons that crop might be selected for comparison, to prove by its greater prolificacy here that "illiteracy" was rather an advantage in farming.—*The Charleston S. C. News.*

[Figures of *Husbandman* presenting a novel statistical investigation, but still we agree with the *News*.—Ed. S. P.]

	Per cent. illiteracy.	*Av. corn crop*, 1876–80, 5 *years, bush.*
South Carolina	48.2	8.6
Louisiana	45.8	17.6
Alabama	43.5	12.5
Georgia	42.8	10.2
Mississippi	41.9	14.7
Average	44.4	12.7
North Carolina	33.3	14.7
Florida	38.0	10.0
Virginia	34.0	20.2
Average	36.7	15.0
Arkansas	28 8	24.2
Tennessee	27.7	23.2
Texas	24.1	22.6
Kentucky	22.2	29.5
Average	25.7	24.9
Maryland	16.0	28.5
Delaware	15.3	27.2
West Virginia	12.1	28.3
Average	14.5	28.0

	Per cent. illiteracy.	*Av. corn crop*, 1876–80, 5 *years, bush.*
Missouri	8.9	29.7
Rhode Island	7.8	32.4
California	7.1	31.5
Massachusetts	5.3	35.0
Average	7.3	32.1
Vermont	4.9	37.4
Indiana	4.8	30.9
Pennsylvania	4.6	35.7
New Jersey	4.5	37.6
Illinois	4.3	28.6
Connecticut	4.2	29.8
New Hampshire	4.2	38.8
New York	4.2	33.1
Oregon	4.1	28.9
Wisconsin	4.0	34.3
Michigan	3.8	35.0
Minnesota	3.7	32.6
Ohio	3.6	35.1
Kansas	3.6	35.2
Maine	3.5	34.4
Nebraska	2.5	36.4
Iowa	2.4	35.2
Average	3.9	34.3

This is, perhaps, the most comprehensive, and it certainly is the most characteristic, paragraph in the posthumous paper by Mr. Darwin on "Instinct," read before the Linnean Society, London, on December 6: "It may not be logical, but to my imagination it is far more satisfactory, to look at the young cuckoo ejecting its foster brothers, the ants making slaves, the larvæ of the ichneumonidæ feeding within the live bodies of their prey, cats playing with mice, otters and cormorants with living fish, not as instincts specially given by the Creator, but as very small parts of one general law leading to the advancement of all organic bodies—multiply, vary, let the strongest live and the weakest die." The above contains the substance of the whole memoir, and it will, no doubt, form the text of those who may attempt to confute the theory of the great student of nature whose death was mourned the other day by the world of science.

The earlier in the season that land plaster or gypsum is sown on clover the more certain it is to produce good results. Some expeperienced farmers sow it on the last snow, and insist that to do most good it should be applied before spring rains have passed.

SUBSOILING AND TILLAGE.

Prof. Sanborn, of the Missouri Agricultural College, has, the past Summer, been conducting experiments bearing upon the question whether subsoiling and frequent stirring of a cultivated soil tends to make land dryer or less dry during a continued drouth. He gives his experience in Bulletin No. 5, from which we condense the following extracts:—Twwo areas of similar land, side by side, of one-tenth acre in area, each, were plowed seven inches deep. No. 1 was subsoiled nine inches deep, or stirred sixteen inches deep in total. September 12, when the severe drouth had become very pronounced, I drove an inch gas pipe fifteen inches deep in four places on each plat; mixed the soil of each plat thoroughly, and tested for moisture. From 960 garins subsoiled plat, 97 grains of water were evaporated. From 960 grains of soil not subsoiled, but 80 grains of water were lost by evaporation, making a difference of much importance in the total moisture of an acre, and which was made evident in the total product of the two plats. The subsoiled plat yilded of corn at the rate of 70.1 bushels per acre, while on the unsubsoiled plat the yield was but 49.3 bushels, while the variation in the yield of stover was only the difference between 4734 pounds and 4022 pounds, the diminished grain yield on the unsuboiled plat being undoubtedly due to a lack of moisture at the critical period in the growth of the crop when the ears were being filled out. To show the difference in another way itmay be stated that on the subsoiled plat it required only 67.5 pounds of stover to yield a bushel of grain, while on the plat not subsoiled, it required 81.6 pounds of stover, or stalks, for a bushel.

The experiments in tillage were made upon bare soil, an area being stirred daily, to the depth of two inches from Aug. 10 to Sept. 7, during which period the drouth had become very severe. On another plat adjoining, the surface was stirred but once during the period named. At the expiration sf the period, samples of soil were taken at half-past five o'clock in the morning, from both plats, dried and weighed, the scales showing that the upper six inches of soil contained most moisture from that portion which had been stirred daily. Prof. Sanborn, however, would have it understood that tillage, to conserve moisture, must be very shallow, say not over two inches in depth, the aim being to get a thin layer of dry surface soil, that will act as a non-conductor of moisture between the dry air above, and the moist surface below. "Hence, deep tillage of surface rooted crops, like corn, is an erroneous practice, founded in erroneous views. Plowing out corn involves too deep tillage in dry weather, but adds to the mischief by severing the roots of corn needed at such times. Our double shovel plows work too deeply. Our true policy in drouth for corn is frequent and shallow tillage." The Professor thinks that nearly all our cultivators are defective in that they run too deeply for the best results in dry weather.—*New England Farmer.*

The more an acre will produce the larger the profit, and the better you cultivate that acre the more it will produce.

REPAIRING ROADS.

To the Editor of the Southern Planter:

Every farmer and planter in the State should subscribe to your valuable periodical, and should, through its columns, give such aid as is in his power to the great work you are doing for the material development of old Virginia. I, as a commissioner appointed by the court, have had occasion to give some study to the repair of a road across a creek-flat, which is very often overflowed. The road was in a most desperate condition—horses often falling into the sloughs, and the axles of conveyances not unfrequently sliding on the soft mud. I wish to state very briefly how I had the road repaired, with the hope that some assistance may be given others who suffer from our wretched highways.

I had the road ditched on one side to drain the ponds, which had formed by washing; then it was leveled, as can be easily done with a scraper; then pine poles 12 feet long were laid across the road, and secured at both ends by logs or poles pinned down. And upon this causeway gravel was placed to the depth of three inches. It is perfectly underdrained, you perceive, by the causeway; the floods cannot carry away the gravel *over the logs* which confine the causeway. These pine poles will last thirty years when thus buried. The section of road to which I refer was repaired a year or two ago; a great number of freshets have been in the creek since, yet the road is as level as a plank floor, and as firm as Broadway. I saw a loaded four-horse wagon pass over it, and the tires did not sink into the gravel. I think if the logs, which secure the poles and gravel, were removed, the causeway would remain, so firmly does it seem imbedded in the earth.

All this seems much like the old way of putting down pine poles and throwing earth on them; but with this difference, that in the one case every freshet takes off the earth and leaves the bare poles to drive over, which is the greatest temptation to swear I ever experienced, while in the other case there is a perfectly smooth, hard road during all kinds of weather.

The expense of making such repair is not great; any one can make the estimate. Gravelly earth or very coarse sand will answer the purpose if gravel is not convenient.

I was laughed at by wiseacres in such matters when this repair was made, and I was told that only the contractor would reap any benefit; that the gravel would wash away, and probably the whole thing, which would be a most fortunate riddance. But the section of road remains as perfect as when built.

Besides advantages already enumerated, others will readily be seen upon reflection; the road is not softened by a heavy rain; the gravel is so wedged in between the poles that even after, and, indeed, during a freshet, it is perfectly solid and compact. It is better than if the repair had been made of stone, because it is absolutely smooth, is infinitely more economical, and will last almost indefinitely. R.

FENCING.

[For the Southern Planter.]

The four barbed double wire is the best for making fences, and when made according to my newly patented plan (dated Oct. 16, 1883), is not only the cheapest, but is harmless and safe from damage to stock, whilst having all of the good qualities of the most dangerous. In making a stationary fence, I use only *one* post in every *forty-eight* feet running measure (the posts are put 2 feet into the ground), *thus saving five posts* in every 48 feet, and also the labor, &c., of putting them into the ground. Between the post 48 feet apart are put 7 upright battens (6 feet apart), and these are 1 inch thick, 2 inches wide, and say 5 feet high. These battens embrace the different wires, and one piece is put on each side of the wires opposite to another piece, and a ten-penny fencing nail is driven through the two pieces as near each wire as can be, which holds all of the wires tightly in their places and prevents them from sagging and being separated by stock, whilst the battens an inch thick on each side of the wires prevents the stock from injury by throwing them off from the barbs. On each post over the wires is nailed an inch thick strip also, thus in passing parallel with the fence and close up to it the stock are thrown off from the barbs by the battens on each side of the wires. Another device of this patent fence is a wire put on the top wire between the battons in shape of small loops, through which loops are put small poles, like fishing poles, from the woods, as a warning on approaching the fence. These poles lay beside the top wire of the fence loosely, and can be seen a good distance off. The battens can be split out of straight oak or ash, or may be sawed out as palings, 1 inch thick, 2 inches wide—*not wider*. The cost of battens is much less than the posts saved, and the work of putting them up far less than placing posts, &c. Wire has become much cheaper than it was two years ago, and the cost of this fence is not more than one-half of the 8-foot pannel fence, whilst it can't burn up, nor blow down, and is more formidable and durable than any fence known. The portable or moveable fence is like the stationary fence, except it

is made in sections of 48 feet, and has 2 posts to every section, with battens between the posts, as in the stationary fence, and a wooden key with notch near the top to draw it up by is used to key it into the ground. This fence can be moved often for years without the least injury, and moved quicker than any fence ever made. I will sell farm rights, county rights, or State rights to put up this fence, and in doing so will say on most reasonable terms, that will be a saving and benefit to the buyer, and a benefit to me.

GEO. WATT.

[For the Southern Planter.]

A FEW YEARS' EXPERIENCE WITH THREE JERSEYS.

BY A VIRGINIA FARMER.

Prompted mainly by curiosity, I purchased in September, 1881, three Jerseys, all pedigree stock. A bull, "Blanco 2180," a heifer and a heifer calf. I had the two last registered in A. J. C. C. as "Spot of Spring Hill 14699" and "Caroline of Spring Hill 14700." These Jerseys were turned in with my Shorthorn cattle and so remained all of next winter, faring as they did, only a little worse, as they were smaller. In the Spring of 1882 they went into pasture in quite as good condition as the Shorthorns. On the 1st of September, 1882, "Spot dropped a H. C.; on the 3d of July, 1883, she dropped another H. C. She has been in full flow of milk since birth of first calf. These two calves were sold last Fall respectively for $200 and $150." One of them has since sold for $225. Spot is now four years old. In calf by my imported Jersey bull "Express," and due to calf on the 28th of April, 1884.

"Caroline" dropped a heifer calf on the 12th of April, 1883. Registered "Bonnie of Spring Hill 23631," on 6th December. This calf is worth $4,200. Caroline is three years old this month, and in milk. She is due to calve by "Express" in March next.

Now to be practical. Do Jerseys pay? Your readers can answer this question by a solution of the following problem: What is the value of any cow that from the 1st of September, 1882, to the 28th of April, 1883, inclusive, has brought and probably will bring three calves at prices above named, to which may be added her milk and butter? Again, Jerseys are good breeders (the best). They also breed for many years. Assume that "Spot" will probably bring eight to ten more calves. Take the two sold as an approximate standard of the value of all, and what will be the approximate nett profit on these calves. The breeders in the Valley of thoroughbred Shorthorns can easily solve

this problem. A gentleman in Henrico County, who raises the best horses in the world (real blue bloods), can answer it, although not a Jersey or cattle man. Again, I do not expect to sell another calf from Spot or Caroline at above prices. Why? Because Jerseys are steadily advancing in price. Secondly, they will be served to the very cream of "blue bloods."

Having satisfied my curiosity; having experimentally discovered that Jerseys are not "*humbug*;" having derived from Spot and Caroline much comfort by way of superior milk and butter; and having in my judgment received enough of profit from them to satisfy any reasonable farmer, I made arrangements with Messrs. A. P. & M. B. Rowe, of Fredericksburg, to run a "co-operative Jersey farm." Here during the Spring and Fall of 1883 my herd was increased to thirty breeding registered cows and heifers. After reserving from the heifer calves such as we wanted, the rest, six in number, were sold last Fall at from 5 to 9 months old for $900. The B. C. did not bring so much. These are the beginning; the first fruits of my herd.

Butter.—With no other dairy arrangement than that for my family, the proceeds of sale of butter for 1883 exceeded my expectations. For 1884, in January (an unfavorable month), I shipped 114 pounds of butter to Richmond at 40 cents per pound (not printed). This butter yield is the resultant after the calves are supplied from their mothers. My calves are not raised on skimmed milk or gruel.

From "Blanco" I also obtained a number of grades, Jerseys and Shorthorns. They have not been sold. Here I am unable to state profit from this source.

I am induced to write this, because in the February number of your valuable paper I did not read one line about "Jerseys," whereas the agricultural papers north, west, and even south of Virginia, are filled with letters and statements about *butter yielding* cows, particularly about the Jerseys, the queen of them all. Again, the demand in the States south of Virginia has never been equaled before. Again, Virginia is a middle State, between the extremes of temperature and free from the sudden changes of the West. She more nearly approaches the climate of their native "Channel Isles." Why then being the best of all the States for raising Jerseys, is she not the *first* to supply the growing demand for them?

JOHN WASHINGTON.

Spring Hill, Feb. 4, 1884.

Abstinence from lawful pleasure is exercise against unlawful.

FLOODS.

In new countries where the forests *have not been destroyed*, and the lands on which these forests stand *have not been* cultivated, floods of *great* extent don't occur often, and when floods do occur in such countries, they are comparatively small in extent, whilst droughts are less common and less serious in their consequences. The reasons for both of these results are one and the same. Native forests particularly are trees of all heights and of many kinds—each tree is a worker of the soil in which it grows. The winds blowing against and swaying the tall trees back and forth causes their lateral roots to lift up the earth to a considerable depth, and make it loose for the easy sinking of the heaviest falls of rain. whilst the fallen leaves, dead wood, &c., hold the water like a sponge to keep the earth's surface moist and friable, and to return back to the clouds by evaporating the moisture necessary for the formation of rains. In this way the larger portion of rain-falls are held back from going into rivers, and thereby *preventing both floods and droughts*, whilst in summer the intensity of the heat is lessened by a greater amount of moisture in the atmosphere from this increased evaporation constantly going on. Destroy these forest trees (*God's forest ploughs*) and take from the earth's surface this spongy mass of leaves, dead wood, &c.; put in the plough and break it about as deep as a turkey gobler would scratch it if pulled backwards by the tail in cultivating crops for ten successive years, and you will find the surface of the earth has gradually become closer and harder, until the rain must rapidly flow into rivers forming floods, and the hard dry earth refusing to send up moisture to temper the hot summer air and to form rain to make the earth fruitful for man's good.

Is there a remedy for this ever-increasing evil, which *must and will increase year after year until the heart of stone will bleed at the dreadful consequences of both flood and drought.* There is one remedy for it, and only one, I can think of, and that will take some time, perhaps years, to work it out, whilst the country is kept open for cultivation, as it must be. This is my remedy: *Gradually plow deeper and deeper every year, until the broken earth will drink up or absorb the rains* that fall, and not run into rivers to form floods, whilst the broken earth holding a larger supply of water because of being broken deeply, will give a cooler atmosphere from the rising moisture, and more frequent rains for having a greater water supply to draw from. In the meanwhile forget not to use all the *good manures* you are able to procure, for the more you use in reason the more friable the soil will become, whilst

every *rain*, *snow*, *frost*, *dew* and *fog* will give you a large amount of fertilizing properties if the earth is broken deep so that they are retained and absorbed; and I will add, keep all land not under the plough in grass.

Geo. Watt.

FRUIT RAISING ON THE FARM.

Mr. Editor,—The importance of growing fruit is an important branch of economic husbandry. The farmer generally has his attention so engrossed with what seems to be the more important parts of agriculture, such as the growing of cereals, the breeding and raising of horses, cattle and swine, that not much thought is given for a supply of fruit for their families. A neglect to thus provide a full supply of these delicious and health-giving articles of diet, is due either to ignorance of their value, or to such a desire for wealth as to lead them to ignore whatever does not promise immediate returns in money for investments made, or to indolence. This putting off from day to day, until this piece of wheat is attended to, the corn ground in order, and this or that work is done, until it is too late for planting trees and plants with a certainty of success. It is not true that the planting and care of trees, and fruiting plants and vines is not as profitable an investment as the same expenditure in other departments of farm work. This has been demonstrated over and over again that an average cash profit of twenty-five per cent. should be realized upon such an investment. Assuming an assent to this statement, and also to the fact of the healthfulness of a diet composed largely of fruit, it is passing strange farmers have neglected for so long a period apple, peach and pear orchards, vineyards, the various berries, such as the strawberry, the raspberry, currants and gooseberries.

The farmer appears to be possessed with the idea, that all he has to do is to put a tree in a hole in the earth; that it will grow and bear fruit in due season; that the tree does not require care and attention in order to make it a thrifty one. Ordinary observation and common sense should teach such an one that a tree, or indeed anything else that is undertaken requires attention, if not, the object will not be attained; the tree will die of starvation and neglect, or be ruined by insects, and when this occurs, the husbandman blames himself for undertaking such a senseless piece of work, and declares he will never do so again. This conclusion is wrong. Let the farmer go to work systematically, follow plain directions, what and how to plant, and how to cultivate such common species of fruits as can be easily and profitably

grown upon every farm. Any rich soil, made deep and fine, such as will produce, say fifty bushels of corn to the acre, with inclination of surface sufficient to turn off surplus surface water, is a good soil for a fruit garden. For all kinds of berries on the farm the rows should be laid out wide enough to allow the plants to occupy all the space needed, and to leave ample room for cultivation with a horse between the rows, and to make this work more expeditious, the rows should be as long as may be, and, of course, less in number than if shorter. For strawberries make out the ground three and one-half by four feet; for currants and gooseberries, four to five feet; for blackberries, six feet; for red raspberries, seven feet; and for blackberries, eight feet apart. The red raspberries and blackberries should not be planted amongst the other species, as the sprouting from the roots, when so planted or when close along side other plants, is a serious annoyance, and the suckers are quite liable to take possession of the whole ground. Therefore leave a clear space of six or seven feet between other sorts and those which can easily be kept clear of these usurpers by occasional plowing with a sharp share plow. Plant but two to four sorts of strawberries, and only those (for a farm garden) which have perfect blossoms, marked "staminate" or "hermaphrodite" in the catalogues. These should be procured from sources known to be reliable, and never from unauthorized, itinerant tree pedlars, as such are generally worthless; nor from the old bed of a neighbor, unless it is known to you that his plants are unmixed, and that the fruit is all you wish in quantity and quality. It is just as easy to raise a bushel of large luscious berries as a bushel of small ones, or those of inferior varieties.

For an abundant supply through the length of the strawberry season, the following varieties are probably as reliable on all soils as any: Piper, Charles Downing, Minor and Kentucky. The last is later than the others. If any of these are not easily obtained, the Longfellow or Cumberland Triumph, both large, splendid berries, may be substituted. Two rows six rods long of each of four varieties named will produce all the fruit a large family will need, both to use in a fresh state and for canning and drying. The plants should be kept in damp moss, or old water-soaked straw from stock bottoms, from the time they are taken out of the ground till planted, taking them from the pail or bucket in which they are carried only as fast as they are needed. Plant with the roots spread and in their *natural position*, not doubled up, cramped or crowded; have the top of the crowns just even with the surface, and press fresh earth firmly against the roots. Plants set two feet apart along the row will fill the row by Fall. Cultivate with cul-

tivator, steel rake and hoe, allowing the row of plants to gradually widen, till it is eighteen inches wide, distributing the young forming plants along the row space by pressing them slightly into the ground, where an even stand is to be secured. Continue the cultivation till Fall; late in November or early in December, cover the plants lightly with any available material, which has no weed or grass seeds amongst it. This may be left on through the next Summer, unless too thick to allow the plants to come through it, in which case it may be partially removed by drawing into the spaces. One or two mowings is all the needed cultivation until after the crop is gathered, when cultivation with a bull tongue plow (or subsoil plow), and diamond tooth cultivator or harrow should be given.

Black raspberries may be planted either in Autumn or early Spring, using only tips of the Fall's growth, planting no deeper than they grow, and if set in Autumn cover well till Spring. These should be planted about three feet apart, and where plants are not too expensive, it is better to put two plants in the same "hill," or very near, so as to secure a stand. The same is true of red raspberry and blackberry plants. Cultivate well, as for corn. In spring the canes should be shortened to about two and a half feet. This and all trimming of raspberries and blackberry plants is rapidly done by use of a corn knife. The growing canes should be shortened or stopped at two and one-half to three feet, and another clipping given the after growth; also to the side branches. This trimming is not absolutely necessary, but will be found to pay in the increased size and quality of the fruit. The Sanhagan for early and Gregg for later sorts are the best. Doolittle and Mammoth Cluster are good varieties. Red Empress may be planted as closely as two feet in the row to advantage, or, if two to three feet they will close up the row the second year. Cultivate as for corn, and scatter manure along the rows and among the plants in the Fall. The second year, and each year afterwards, the growing canes should be slashed off at three to three and a half feet high, one trimming being sufficient; and in no case trim any raspberries or blackberries later than the 1st of August. The Turner and Cuthbert are early and late sorts, hardy and prolific.

The directions given for red raspberries apply also to blackberries. The dead canes can be removed at any time during Winter or early Spring. It is well, where material is at hand, to cover the entire ground, after cultivation is given the second Spring, to the depth of four inches with straw, old hay or cornstalks, giving a good sprinkling of manure along the rows to those as well as all other species each al-

ternate Winter. The Snyder is the most reliable and satisfactory of any one variety. Early Harvest is a very early sort, and satisfactory wherever grown.

Two rows each of black and red raspberries and blackberries six rods long will give an abundance of fruit for the family, and to spare.

M.

GUMPTION. (?)

If called upon to express in one word the essential qualifications for success in rural industry, I would unhesitatingly use the "old English" word "gumption."

A farmer may have energy, intelligence and means, but if he lacks gumption he will fail of success. Gumption not only directs how, but what to farm—what products bring the largest returns from the labor and money expended thereon.

Gumption discourages going on increasing from year to year on over-supply of any commodity, when others are in demand which pay better and which could be as readily and more profitably produced.

Gumption never risks all on one crop, but diversifies; and after making the farm as near self-sustaining as possible as regards home needs, then directs attention to what is wanted and can be best and most profitably produced on the farm, consulting adaptability of soil, capacity and experience in management.

It is the province of gumption to select the best tools and implements and take proper care of them; to keep the best stock and teams and to properly care for them; to feed and improve the soil, beautify the homestead and surroundings, adding every convenience necessary; to prepare for work and execute at the proper time, using system in the management and adapting it to favorable or unfavorable conditions of seasons and circumstances, making the most of the first and wrenching success from the other.

This is gumption, a faculty allied to common-sense and greatly improved by cultivation.

Gumption is by no means confined to the rural population, but is potent in other callings and occupations. When the writer was a pupil in college, he had for associates two young men, both of more than ordinary intelligence and capacity. One called himself "a genius," and stood fairly well in his classes, without much study; while the other, a quiet, modest youth, said "I have to study closely and long on my lessons to prepare for recitation." These two were often pitted against each other in debate in the literary society, and it was the verdict of that society that the "genius" often got the benefit of his opponent in discussion." But the former went to the grave a wreck, leaving no impress of his genius upon the age in which he lived, while the latter is now a distinguished Bishop of the church, of humble piety, great learning and commanding influence. One had genius, the other had gumption.—*The Rural Messenger.*—R. L. R.

Hyco, Halifax County, Va.

MAKING PONDS FOR GERMAN CARP.

As many are desirous of information in regard to making ponds and raising carp, I will add a few thoughts to what I have said heretofore, and you may publish them in your reliable paper if you think them worthy.

On draining my pond in November, I counted 4,000 young carp, all of which were raised from eggs deposited by two females, that weigh twelve ponnds each; the two males weigh ten pounds each.

I have 400 year-olds, which will average two and one-half to three pounds cach. These will spawn next spring, yet they will not produce as many eggs as those three years old.

I consider them excellent food. I sampled them in the spring months —they are good and juicy. They are good food from November 1st to June 15th. Like the fish of our streams, they are not good during the summer months when the water is impure.

The Maryland Fish Commission says: "The cultivation of carp is of sufficient importance to fully warrant the construction of ponds for the purpose." But there are already existing in many places stock ponds that could be easily converted into carp ponds at a comparatively small cost. There are also many depressions in the land which could, with little labor, be made to answer the purpose. It is very desirable, on several accounts, that the pounds be constructed so as to permit the water to be drawn off. The fish then can be captured and assorted. Those that are intended for breeding purposes can be returned to the pond, while the remainder can be placed in tanks or boxes and conveniently got at for market or for food. In drawing off the water you are also enabled to get rid of such enemies as the branch minnows, frogs, turtles, etc. I have also the Pekin duck, large and very beautiful, and white as snow, yellow bill and feet, which I make very useful in destroying toad frogs, little frogs, and other vermin that infest the ponds. In spawning time, however, I shut them away from the ponds until the eggs are hatched.

One deep place for them in winter is all that is necessary—three feet will do in this climate. Then vary the depth from that to one inch. Warm water is best for growth. The carp is, indeed, a vegetarian—the products of the garden are his most delectable dishes. A true epicurean, he fares better with them well cooked. His appetite however, is such that he will take anything that a pig will eat, and like a pig ar chicken, can be taught to come at feeding time in swarms and feed from the hand. He will do as well without feeding as a chicken. In winter he sleeps the frozen hours away in the deepest water and requires no feeding.

It is estimated that a ton of carp can be raised off a pond of one acre. This is a small estimate. But even this at ten cents per pound would be $200. I have three small ponds covering an area of about half an acre. From the number I have I will keep 500 for the table, and the others I can dispose of at my leisure from now until Christmas, then from February 1st until March 1st.—*S. M. Clayton, in Observer.*

PEA FALLOW.

Editor Southern Planter,—I have managed a farm for my father for the last five years, during which time we have sowed peas nearly every year, and if my experience will be of any use to any brother farmer, he is most welcome to it. Peas can be bought in Alexandria or Washington, generally, at from eighty-five cents to $1.15. The land should be thoroughly ploughed and harrowed, and from three pecks to one bushel of peas seeded to the acre any time from the first to the twentieth of May. A drill is very good to sow them with, but if seeded by hand, I think a cultivator is the best thing to use, followed by a good harrow. Most people think a pea can come through any clod, which is a great mistake. They should be put in nicely. Orchilla guano is the best fertilizer to use on them.

I prefer to fallow sometime in August, and have had best results from peas fallowed then, but four or six acres can be kept for seed, and to see which is the most satisfactory time to fallow.

Peas should be fallowed with a good plough and team and thoroughly turned under. They are a valuable fertilizer, used with other manures; but it takes time to make land rich when using them by themselves.

If this information should be of any use to any one, I shall be more than repaid for writing it. Most truly, J. L. B.

P. S.—The common black pea is the best kind to use for fallow, and can be bought much cheaper. J. L. B.

THE MORE ENLIGHTENED POLICY ONCE MORE.

Mr. Editor,—Another beautiful winter is well-nigh over, and from its blanket of snow and ice, unexpectedly, the wheat has emerged unharmed. Thus far, the prospect conspires with the promises found in Prov. ix, 3d, to induce on our part care to "honor the Lord with our substance" if we would see heavy returns of this cereal harvested. But with this, the problem of large returns of this and other crops, most of your correspondents are already occupied; and for this reason, to mention no others, this correspondent will not turn aside to the doctrine of First Fruits and its connection with heavy crops, but pass on to his original problem of the new honors awaiting the very fields where, on the part of the people, due honors are done the Lord's Day and the Lord's Word.

But why should the readers of the *Planter* be interested in these new

honors as he styles them? Our sons and daughters, we reply, are not, of course, to be denied their right to culture and access to the masterpieces of art and nature, and if not, then they are not to live by wheat alone, but by turf and shade and alternations of meadow and woodland, not to say forest and stream. Skies such as bend over the people whose habitat is on the river system of the Chesapeake, were never intended to find the landscape denuded, swept by Winter winds and parched with Summer heats, with little or no relief from growing trees or grasses. Any system which thus taxes our arable lands and keeps them incessantly under the plow, plays havoc with the landscape, betrays into toil unprofitable. Expenditures, injudicious and perplexities fatal to the "*otium cum dignitate*" once associated with the life of the agriculturist.

There are many vexed questions, and that of keeping sons content with the career of a planter is one of them. It is for this the writer selects as his apology for specifying for the present, simply new honors awaiting the fields. For him, the osage orange hedge has, for some ten years, proved a border of coral for hours, if not days, together at this season, and all Summer long a border of verdure. Intended originally for restraining flocks, it has been found not only to do this effectually, but also to furnish for their security dog-proof enclosures, solving by a single stroke, as it were, the two vexed questions of security for your flock for one and that of expensive fencing for another. For him and his sons, for the last four years, the ensilage of corn has furnished the key to gilt-edge butter in February and cattle stalking about the straw-yard in coats of satin. This last year, the ensilage of clover, direct from the wagon to the silo, without the use of a cutting-box, confirms us in the impression, that this process of ensilaging is set for magnifying clover and its uses and securing in the rotation larger scope than ever for the presence of this soil-renovating plant, for a week and more in June rivalling in its rich crimson bloom the very roses of Damascus.

These are some of the honors achieved for fields lying along the Valley McAdamized road, and coming under the eye of such as travel it. The objections of Dr. Pollard to the hedge fail to apply here, and he will be pleased to learn that Ex-Governor Holliday is one who has driven for miles along its course and failed to observe a single sprout. Let the fields have the opportunity to clothe and shade and fence themselves, with such assistance from the hand of man as his duty to God will admit and no more. This will remind all readers of the Concordance mentioned in his first article in October last, and of the interest

claimed for the *agriculturists of the State as such*, in the effort then being made and soon to be resumed, of organizing the Sunday-schools of the State, county by county, into associations—inter-denominational. Yes, your correspondent has a mission of a higher order. He is not a member of the State Sunday-school Executive Committee, but as the State's representative on the Executive Committee of the Sunday-school International, he is in frequent correspondence with Richmond. Next June the Convention, Sunday-school International, is to meet at Louisville, Ky., in their regular tri-ennial session. Our State will be asked to send up to this Convention twenty-four delegates—chosen men, and as many alternates. Now, the Sunday-school has been a Virginia institution for some sixty years, but what of this new design upon these schools? The Lesson Leaf is the reply. Insignificant as that leaf is and inexpensive, it has, under God, wrought marvellously. The Publishing Houses of England and America have, it is said, felt its elevating power and gracefully yielded to it. Wherever mails can penetrate, wafted by them to every nook and cranny of our land, it has carried the Scripture Lesson of the coming Sunday, if not an exposition of it. No man can tell what blessings for our State may be found yet as a sequel in the future. Chief among those your correspondent thinks he sees, is the Correspondence School, the resumption on the part of our people of the use of the Concordance, and a better observance of the Lord's Day.

With many thanks, Mr. Editor, for the privilege accorded him of bringing thus our Virginia, and indeed Southern homes, face to face with this effort to compass ultimately their highest culture, sitting at the feet of the Highest, learning wisdom's lesson from His Word,

He is, very truly yours,

W. A. Crawford.

At the Curve: P. O. Kernstown, Va., Feb. 8th, 1884.

Prof. Huxley has declared that in his voyage around the world, and in all his studies of savage life, he found no people so miserable, wretched and degraded as those who exist in the poorer quarters of London. The barbarians who live in a constant state of violence and depredation, and who are exposed to the worst rigors of climate and weather, have more enjoyable and independent lives than these miserable workers and artisans, and he says that if he had to make his choice he should unhesitatingly prefer the existence of the former.

To remove rust from tools, first scour them with emery moistened with sulphuric acid diluted with six volumes of water, rinse dry and finish with oil and emery flour.

A STIRRING APPEAL TO SOUTHERN PLANTERS.

To the Editor of Farming World:

Since my last communication, written some time last year, many changes have taken place in this country. The sad experience of last year caused the farmers to curtail the acreage of cotton, and well they should, for last year there was an immense crop of cotton raised in Old Navarro and adjoining counties. There was not a farmer anywhere to be found who could, with his own force, gather his cotton, and they were therefore forced to hire their cotton gathered, and pay one dollar and twenty-five cents per hundred for gathering, and board the hands while they did the work. Cotton was seven and eight cents per pound when carried to market. Now, let us see what their profit was, 1,800 pounds of seed cotton make a 500-pound bale of lint cotton. The cost of picking one bale of seed cotton at $1.25 per hundred is $23.50. An average hand will pick one hundred and fifty pounds per day; in twelve days will pick 1,800 pounds. Seventy-five cents per day, board for twelve days, $9, which, added to cost of picking, is $32.50. One bale of cotton at eight cents per pound, $40. Deduct $32.50 from $40, and we have $7.50 for our bale of cotton, to pay cost of production and expense of hauling to gin and to market, which, if we hire, will be $1.50 per bale hauled to gin, and $1.50 to haul to market, which would leave us the great sum of $4.50! These are facts. It is no overdrawn picture. Brother farmers, what are we doing? Are we accumulating anything to lay up for future days, when we are not longer able to work, or when sickness and other adverse circumstances overtake us? Farmers of the South, we to-day are looking to the North and West for our food supply! Why should we do it, when we have soil that will produce from 140 to 175 bushels of corn per acre, and that without fertilizers or manure of any kind. Wheat from ten to twenty-five bushels any year, and that badly put in. Hogs thrive as well here as in any country on the globe.

Farmers, we have the lever that will move the world if we would only use it. All the non-producing class (and they compose about four-fifths of the population of the world) are dependent upon the farmer for all they have. We can withhold our produce and still live, and compel the world to come to terms with us. Why then should we be so dependent, when we can be the most independent and free people that the world ever beheld. Why produce a few bales of cotton that will barely cover cost of production, and depend on some one else for food supplies?

S. C. French.

Nevarro county, Texas.

Dr. C. H. Yelvington asserts that the copperhead never bites when coiled up, but will throw the middle of his body into long, almost rectangular, curves, and with his head and an inch or so of the neck slightly elevated above the ground is ready to defend himself.

NOTES ON FRENCH AGRICULTURE.

AGRICULTURAL CREDIT.

Editors Press:—One great obstacle to French agriculture lies in the absence of pecuniary credit for the farmer. He is not considered a trader by the law—that is to say, he is not engaged in commerce and industry; cannot be declared a bankrupt; hence if the banks come to his assistance it is as a private individual. French agriculturists complain that it does not pay them to borrow 5 per cent. Those who adopt this view belong to the class, who, after obtaining a loan, have not the skilled knowledge for its profitable application, and that which is too often the case, the loan is invested in other projects. Farmers who borrow when they are on the road to ruin, will find the lowest interest excessive.

Lombardy is perhaps the best cultivated land in Europe; there farmers are thriving. They borrow money at 7 or 8 per cent. and remain not the less prosperous. The reason is they know how to utilize it. Mr. Leon Say, ex Finance Minister, has just visited Lombardy to examine into the working of the agricultural banks, to which the prosperous condition of the farmers is due. In France the standing economical and administrative vice is, that the State governs everything, and everything goes to the State. In Lombardy it is just the contrary. There each townland has its savings bank, which is at the same time a loan fund, and fed by the local deposits. The little banks are managed gratuitously, and loans are granted, not on the farmer's property, but on his value as a shrewd, industrious, and steady man. These attributes count almost for nothing in France, where the security must be material.

Lombardy is thus covered with a net work of mutual loan fiends, and these in turn are sustained by the Grand Central Popular Bank, that advances money to cash bills. The rate of interest, perfectly free, never exceeds 8 per cent. Each depositor or shareholder has his bank book, and the amount therein registered can be at once negotiated by means of the book, which is scrip and ever property of the bearer. The chief bank of Milan has 228 of these little saving-loaning banks, manipulating a total of 216 millions of francs annually; there is a total of 356,000 depositors—for traders and citizens can co-operate as well as farmers—representing an aggregate of 280 million francs—all thrift; frugality without parsimony.

HORSE NOTES.

France has certainly not yet got into the secret of horse breeding. However, her government since 1651 has been dabbling with solutions. In Austria, Russia and Germany the State breeds, rears and trains nearly all the horses required for the army. In France the State merely has regional studs, occupied by about 2,520 stallions, of which 218 are pure English and 187 pure Arab blood; there are 1,860 half-blood. These stallions are sent over the country to cover whatever are

presented. But while the government devotes much care to providing good sires, it pays no attention to the mother.

It is not thus in the countries as above alluded to. Further, Austria, etc., aim to obtain a light horse, suitable for all kinds of work, the saddle as well as draft. Now French agriculturists desire a heavy animal, awkward, unenergetic and lymphatic, something of the mastodon type, perhaps. Now, a circumstance over which they have, likely, no control compels to this preference—the habit of employing two-wheeled carts instead of the four-wheeled wagon. The two-wheeled vehicle in turn is necessitated by the nature of the roads. There is great loss of power in the yoking of five or six horses in a tandem line to very primitive carts.

France expends 20 million francs annually for the remounting of her cavalry. All this money could be kept in the country did the army buyers offer a higher price. As it is, all animals higher than the chartered rates are exported. Horses are set to work too young in France; some at eighteen months, and so become prematurely used up. Farmers would not be able to work good blood colts at such a low age, hence why they prefer heavy, massive sires.

The army vets are experimenting a new mode of procedure; they purchase the horses at three years of age, and pending two years, allow them to have the run of meadows, in addition to the stable, feeding them well and training at the same time. These two years of idleness, though costly, pay in the end, as the animals endure longer, having been spared premature fatigue. It has been found also, that colts thus brought up remain peculiarly exempt from the maladies of cavalry horses condemned ever to remain so many hours daily tied to the manger.

While on the subject of horses, I may observe, that in the buying of them the seller's recommendation never receives any weight. He is too well known to have an ax to grind. The intending buyer endeavors to obtain a private peep at the animal in the stable, take the horse unawares, as when the dealer is present it would appear different. A look can thus be obtained at the animal feeding; its age controlled; the eye peered into to ascertain if the owner be mild or wicked. Care is taken to have the horse shown off, not on a little run, but on a hard, or stone-covered road, making it at first walk, and next to stand in a horizontal position. Then order a trot, observing well if the animal, on turning, yields to a side to relieve some drawback to the feet. After the run, listen to the respiration and note the movement of the flanks; press the throat to provoke a cough; if the latter be frank and sonorous, the horse is in good health; if dry and short, beware. In the case of saddle horses, the purchaser ought to mount himself and remark if the animal replies to the pressure of the knees and the spur; if the buyer is occupied with a pair for a carriage, have them put to and take the ribbons yourself.

AMERICAN PORK.

The government has recovered from its scare; the great hog question is settled. American pork is again admitted into France; never

having communicated trichnosis to Americans themselves, or the English, it was a strange conclusion to consider it would poison the French. All's well that ends well. But salicylic acid is now in as illogical position as American pork; the acid, in addition to being a powerful antiseptic, is efficacious in the treatment of foot and mouth diseases, yet the government prohibits its use as if it were dynamite.

THE FOOD QUESTION

Is ever at the front. M. Gayot confirms his experiments, that the addition of a little phosphate of lime to the rations of young horses stimulates their development. Many farmers have laid in supplies of leaves of the elm, linden, and willow. Avoid those of the ash, as they are astringent, for the Winter feeding of sheep. Chemically, such leaves are ranked in point of nutrition, on a par with ordinary meadow-hay. Though palm cake and meal are excellent fatting substances. Professor Holdefleiss, of Damstadt, finds the meal less rich in fatty matters than the cake. In the latter case the oil is extracted by pressure; in the former by chemical agents. The mean percentage of fatty principles in the cake is 12. Attempts are again being made to popularize the use of chestnuts for feeding stock. Mixed with the ordinary rations in the proportion of 2 pounds daily for sheep, and 16 for cattle, chestnuts have given fair results. They are tannic and bitter, and hence liable to induce constipation, but they impart no special flavor to milk, and add firmness to the flesh.

Sorgo has never really taken in France. It was in 1851 that the French Consul at Shanghi sent a number of the plants for experiment. It was introduced with too many flourishes of trumpets. However, it was from the industrial, not the fodder point of view, that the culture was advocated. It was thus brought into competition with maize and beet. Sorgo requires rather much care, and is cultivated as maize. The soil must not be poor, nor made too rich; the climate must have at least a mean temperature of 69 degrees for 150 days; associated with these conditions must be a fair amount of humidity, or irrigation, for sorgo is a tropical plant. The plant grows to 6 and 11 feet high, in a tuft of 8 to 10 stems, of which two or three bear the seed. Dr. Sicard has discovered that the sacherine substance disappears from the summit of the plant pending the maturation of the grain, while it continues to accumulate in the stem. The experiments of Biot and Soubeiran confirm that on removing the ears of maize before their maturity, this did increase the secretion of juice in the stem more than two per cent. The same remarks apply to sorgo. Bear in mind the maturation of the plant must not be confounded with its natural desiccation, a process quite distinct and taking place at a different epoch. In France the yield of sorgho is about 25 tons per acre, giving 25 per cent. of its weight of juice, that which represents about 19 cwts. of crystallized sugar. But this corresponds to the yield of beet sugar, and the latter can be worked more easily and above all more surely. For forage—tilled like maize—50 tons per acre have been reaped; the

plant must be cut before it hardens and the knots get woody. It is chaffed and mixed wtth bran. Some suggest to dry it like hay. Its great competitor, however, is maize. A beet-sugar manufacturer at Eichhofen undertakes to buy roots at 12 fr. ton all round, plus an increase for roots above a fixed richness.

Hawthorn hedges along fields and railways are being utilized. At every six feet distance a good hawthorn is allowed to grow above the clipped surface; on this a shoot of a pear tree is grafted, and trained in the form of a pyramid, will soon yield excellent fruit.—AGRON.—*In Pacific Rural Press.*

UNDERDRAINING LAND.

Much of the richest and best land in the Eastern States remains as waste land, because no one has taken the trouble to bring it into a productive condition. The wet land is generally the richest land. The fertility of the higher land, for ages, has been washing down and collecting in the hollows, swamps, and wet places, and very little, if any, of this fertility has been removed by crops or in other ways. When a country is first settled, the higher land is more easily cleared and brought into a productive condition than the low land. The low land needs draining as well as clearing, and consequently it is left until the value of land increases to such an extent that the owner feels that he can afford to be to the necessary expense of draining it. There are thousands of acres in every one of the older States which need draining, and which would well repay the expense of doing it,

Draining has not been extensively practised, and farmers are backward about engaging in it. Those who have tried draining, have found that it well repays the expense incurred. Nearly every farm has more or less land that might be improved by draining. So long as land is saturated with stagnant water it will not prove productive, however rich it may be. An excess of water in cultivated lands prevents washing them early in the Spring, and the evaporation of the water cools the soil so that it is colder than well-drained land. By drainage, the land is made warmer, and the season during which the crops can be growing on it is lengthened—two very desirable improvements.

INCREASED PRODUCTIVENESS ATTENDING UNDERDRAINING.

The fertility and productiveness of wet lands are well demonstrated by the abundant crops which are obtained after they are thoroughly underdrained. A few instances of the profitableness of draining may be given. A piece of rough, pasture land in Essex county, Massachusetts, containing $2\frac{7}{8}$ acres, worth $120, was cleared of alders, birches, and huckleberry bushes, and stones, and then underdrained. The cost of clearing, draining and cultivating during five years, was $1,507, including cost of land. The total receipts during the same time, reckoning the land worth $350, was $2,462. The profit for four years on this piece of $2\frac{7}{8}$ acres of rough pasture land, was $955, leaving the land in

good condition, and well underdrained 3½ feet deep. Underdraining certainly paid in this instance. An acre of swamp land was purchased for $17, was ditched and worked at an expense of $100 for four years, during which time it yielded hay and potatoes worth $132, and left the acre worth $100 instead of $17.

In Michigan, 25 acres of swales, producing only bog grass, flags, rushes, and other worthless rubbish, were tile drained at an expense of $480. The grass product the first year after draining was worth $1,570, while the product previously had not been worth anything.

An Ontario, New York, farmer had 12 acres of land which was so wet that except upon knolls, it would not produce wheat. He laid drains 2½ feet deep, and 36 feet apart at a cost of $40 per acre, and plowed deep. He could then raise 40 bushels of wheat per acre.

In the New Hampshire Agricultural Report for 1870–76, George F. Beede states that 2¼ acres of low land, from which he got only 1½ tons of hay before draining, he cut, after draining, in one season, eight tons of cured hay, in two crops. The increase in the crop at market prices would have paid for the draining, which cost $50 per acre. Mr. Beede adds: "What a rush there would be among capitalists if there was an investment paying from 50 to 100 per cent. annually! Farmers have just such an investment in draining their wet lands, and seeding them with the grasses."

Peter Henderson, in his "Gardening for Profit," gives an instance of a "German who leased for ten years, eight acres of land near New York. After working it for three years, with late and stinted crops that barely afforded him a living, he was advised to drain it, but hesitated, as his lease had but seven years to run. He finally acted on the advice, and spent $500 in tile draining. He then obtained early and luxuriant crops, and at the termination of his lease, purchased and paid for his eight acres $12,000, the savings of six years on his drained garden. I honestly believe," says Mr. Henderson, "that, had he gone on without draining, he would not have made $1,200 in twelve years, far less $12,000 in six years."

THE EFFECTS OF DRAINING ON THE SOIL.

The beneficial effects of drainage are very marked. The stagnant water is removed from the surface, and from the soil to the depth of the drain. Plants need water, but they do not thrive in stagnant water. The roots of plants will even decay if kept too wet. Cultivated plants will not usually extend their roots into the soil below the line at which water stands permanently. Land which is well drained will not only be dry early in the Spring, but will suffer less from drought during the hot weather of Summer than the wet soil. The surface of wet land generally bakes into a hard crust when the water dries out of it, while if it is underdrained so that the water drains away, the surface will be left soft and pulverant.

Col. Geo. E. Waring, Jr., in his "Hand-book of Husbandry," sums up the advantages of tile draining, as follows: "1. It greatly lessens the evil effects of drought. 2. It enables the soil to receive a larger

supply of the fertilizing gases of the atmosphere (carbonic acid and ammonia). 3. It warms the lower portions of the soil. 4. It lessens the cooking of the soil by evaporation. 5. It greatly facilitates the chemical action by which its mechanical texture is improved. 6. It tends to prevent the grass lands from running out. 7. It deepens the surface soil. 8. It renders the soil earlier in the spring, and keeps off cold weather longer in the Fall. 9. It prevents the throwing of grain in winter. 10. It enables us to work much sooner after rains. 11. It prevents land from becoming sour. 12. It lessens the formation of a crust on the surface of the soil after rains in hot weather."

The late John H. Klippart, in a similar manner, summarized the advantages of draining as follows: "1. The drainage removes stagnant water from the surface. 2. It removes surplus water from under the surface. 3. It lengthens the seasons. 4. It deepens the soil. 5. It warms the soil. 6. It equalizes the temperature of the soil during the season of growth. 7. It carries down soluble substances to the roots of the plants. 8. It prevents 'heaving out,' or 'freezing out.' 9. It prevents injury from drought. 10. It improves the quality and quantity of the crop. 11. It increases the effects of manures. 12. It prevents rust in wheat and rot in potatoes."

Many a man who has sold his farm in the Eastern States and gone West to obtain rich land, might have obtained rich land at home by draining his wet land.

THE BEST MATERIAL FOR DRAINS.

The best material for the construction of the drains is tile. Sometimes, however, it is desirable to use other material, such as stones, where there is a large supply near at hand, which it is desirable to dispose of. When stones are used, the ditch must be dug wider, and must be at least three or four feet deep. Stones should be laid each side of the drain, and covered with larger stones so as to leave an unobstructed passageway for the water. The small stones should be used to fill in above the large stones so as to stop all the holes. Hard earth should be placed next to the stones so as to prevent rats and mice from entering the drain, and opening a way for the dirt to rattle into the main drain, or for water to run in and wash dirt in. Unless the stone drains are made with much care, rats, mice and water are pretty sure to find places where they can run in and injure it. Well made stone drains have been known to last forty years. Tile, however, will generally be found the most satisfactory material, and the cheapest in the long run. Less earth needs to be removed for using tiles than for other materials, and this is an important consideration as regards expense.

DEPTH AND DISTANCE OF DRAINS.

The depth and distance of the drains depends upon the character of the soil to be drained. Where the upper bed is retentive, and of such depth that the drain does not reach below it, the drains may be shallow and near together. But if the soil is porous, the drains should be placed deeper, and at further distances apart. When the soil is to be

cultivated, the drains should not be less than three feet from the surface, so as to give a good depth for the roots of the plants to extend. Prof. John Scott, in a work on drainage, recommends that the distances between drains on strong clay lands, should, generally speaking, be from four to six times the depth; on strong loam, six to eight times the depth, and on light soils, eight to ten times the depth. The length and depth of the drains and their distance apart regulate the size of pipe that should be used, but level ground requires larger pipes than where the inclination is greater. The capacity of the pipes should be sufficient to carry off the maximum flow of water. It is well to have the drains placed at a good depth, say at least three feet, and four is better. The roots of plants generally penetrate to the water level, which is at the bottom of the drain.

Mr. Bailey Dunton reports that he has traced the roots of wheat nine feet deep, and the roots of perennial grasses, he has found in drains four feet deep, while he cites an instance where the roots of mangolds were found at a depth of five feet. It is evident that there is little danger of placing the drains too deep. By placing the drains deep, a larger portion of soil will be opened to the plant roots to feed upon, affording more nourishment, and in times of drought more moisture, the soil dries off earlier in Spring, and heavy rains are less likely to fill to overflowing the deep drains than they are the shallow ones. In draining, much care and skill is required to lay out the drains so as to secure the best results when the work is completed. Every farmer might do a little work every year in the way of draining, and in a few years would have his farm well drained.—H. Reynolds, M. D., *in New England Farmer.*

INQUIRIES.

Editor Southern Planter,—Being a subscriber to your valuable journal for seven years, and desirous of obtaining information on sheep, etc., I wish you to ask through the medium of your journal some one posted on diseases of sheep, the following:

I had two ewes that lambed about February 1st; ten days afterwards I found their bags were diseased—very hard, high fever, and the sheep looking badly and would not eat. I began using carbolic acid, which stopped the disease, though their bags were decayed and rotted out. Is there any such disease as bag rot in sheep? This is no milk-fever case, as the lambs had milked for ten days.

Will some one having had experience with sheep give me the cause of this disease and its remedy? I have quite a large flock of fine sheep and am almost a novice in the business.

Query No. 2.—Will Dr. Ellzey or some one else answer this?

Are mares that are sucking colts as likely to conceive as those that are not? and what is the best time to put a mare to a stallion between

the having of a colt and its weaning—or the time she is most likely to conceive?

Now with cows and hogs I know that if they are not put with the male immediately after having young, or in five days' time they will not come in heat again until they wean their young. There are some exceptions to this rule, but not many.

I should like to have these questions answered as early as possible, as I don't know how soon the disease may affect more of my sheep.

Very respectfully, EDWIN T. RUGG.

Westhampton P. O., Henrico Co., Va.

"LEGISLATION FOR FARMERS."

Editor Southern Planter,—The article "Legislation for Farmers," is thought in the right direction. Every farmer ought to read, ponder, and act upon it until they stand up in their majesty and demand the right to make their own laws, and make them just and equitable for all classes.

It is unnatural and outrageous that any profession or business should have its laws and duties made and assigned by another class, trade or profession. Who makes our laws? Does the farmer? I think not. If he happen to be a large element in the legislature, his stupidity is so conceded (falsely) by the professional element, that he is thrust aside, and his modesty allows others to word the laws, often in misunderstood terms, for which he votes, and thus acts against his own interests.

Farmers ought to make their own laws, because they are the bone and sinew of the country. Upon their calling every other trade and profession in life depends. They are the head of the world. All other businesses of men in their various trades and professions are but the members of that body politic, of which farming is the grand and ennobling head, and as such deserves the greater honor.

In proportion as the head is injured, measurably does the body suffer in its arms, legs and feet. The head is the only part of the body which, if destroyed, all other parts are destroyed. Stop the cultivation of the soil, and you kill the world, because you stop the source of all life. Stop the merchant, you only cripple the world. Abolish any other trade or profession, the world yet lives and draws its food and clothing.

All honor to this noble calling. Let all classes seek to promote her interest. Hand in hand, help her to obtain just and wise legislation, and faithfully administer it.

Very respectfully, A. J. A.

PRINCIPLES GOVERNING ROTATION OF CROPS.

No matter how fertile a soil may be, constant cropping with one, two or three kinds of grain which require the same elements of plant-food, will soon result in permanent exhaustion. It may be laid down as an axiom, "that every system of culture which does not bring from an outside source the materials—whether nitrates, phosphates or potash, etc., rare in a soil, and carried off by the produce, must ultimately cause the soil to suffer in fecundity."

As the most important elements of plant-food are nitrogen, phosphoric acid and potash, it is necessary that such crops be grown in succession as do not require the same substances in equal amount. For example, while the cotton crop appropriates much more nitrogen than the corn crop, it takes quite as much more potash and phosphoric acid. Or, as stated by Prof. Pendleton, there is taken up by one crop of cotton, 31.00 nitrogen, 9.06 phosphoric acid, 11.06 potash; four crops of corn, 36 00 nitrogen, 10.08 phosphoric acid, 8.58 potash. Thus it seems that cotton and corn feed alike on these substances, the main difference being as to the qantity of each. A double crop of corn would consume about as much of these substances as half a crop of cotton. Of the other principal crops in the South, the oat crop destroys more potash than the others, and the field pea less phosphoric acid, while each of these crops consumes more nitrogen than corn and wheat.

The need of a rotation that will leave the soil in the best possible condition is apparent. Every bushel of grain, pound of cotton, beef, mutton, pork, or bone, and every ton of straw or hay carried off the farm, reduces the productive capabilities of the land by exactly the amount of nitrogen, phosphorus, potash, etc., removed from the soil.

A single system of rotation is not, nor can it be applicable in all localities. The only true test of any system is its continued success. In planning a judicious rotation it is advisable to alternate with the narrow-leaved cereals, such as wheat, oats, barley, or rye, those having broad leaves, such as clover, peas, and the root crops. Perpendicular rooting plants, and such as root horizontally, ought to succeed each other. Two plants favorable to the growth of weeds ought not to succeed each other. Grain and oil plants should only be grown at intervals, unless the soil is in excellent condition. Plants which prove to be the least exhaustive should invariably be alternated with those of an opposite character.

Among the many special advantages of rotation, a very decided one is that it affords the means for destroying weeds and noxious insects. The latter, if deprived of their special food for two seasons in succession, usually die of starvation. Clover is of special value in a rotation, as the shade produced by its rank growth of foliage favors the development and storage of nitrogenous matter near the surface. Another advantage gained by rotation is that it affords the land an opportunity to rest. The length of this rest should be determined by the supply of vegetable matter in the soil. The less the quantity the more frequent should be the periods of rest and recuperation. As a general rule, a

system involving rest every fourth year is the best. However, the leading object in any system of rotation should be to realize the highest profit from our land, and, at the same time, to preserve or increase its fertility. While it cannot be consistenly claimed that rotation is indispensable, it is undoubtedly the best economy of manure, time and labor. A rotation of manures may be substituted, in part, at least, for one of crops, but the most skillful farmers are those who combine a rotation of crops with one of special manures for special crops.—W. M. K., *in Farm and Fireside.*

APPLES, No. 2.

Editor Southern Planter,—In the December number, page 601, in speaking of the Roman Beauty apple, the types make me say "the fruit should be *thick*," when it should read the fruit should be *thinned*, as the tree is disposed to overbear. The fruit of this tree was thinned twice last year, the limbs propped up, and then some of them broke. As an experiment, I took some of the Roman Beauty, Ben. Davis, Midlothian and Smith's Cider apples, wrapped them in paper, put them in a paper-bag, and then kept them in the cellar to test their keeping qualities. The Smith's Cider was the first to go sometime in December; the Ben. Davis began to rot, and was eaten about January 5th; the Midlothian about February 15th, and the Roman Beauty *is keeping yet*, and will keep until 15th March, which is far beyond my expectations as a keeper, and which will give it *a season of over six months*. (From 15th August to 15th March is seven months.)

A friend of mine, who read the article in the number above, said to me, as the limbs of the Roman Beauty tree hung down nearly to the ground, that that was an objection with him, as he could not plough under them. Be that as it may, I shall plant more of them. The Old Father Abram and the Adkins apples are keeping yet. Now, if any of your readers have better Winter apples than the two last, that will succeed here, let them speak out.

Our peaches are all killed; killed the 5th or 6th of January. Can you, or any of your readers, inform me of a peach (if there is such a one) that will not kill in Winter, and that will withstand the late frosts of Spring. Yery truly, yours,

GEO. B. ADKINS.

Chesterfield Co., Va., March 3d, 1884.

DURING the year 1883, 830 head of polled Aberdeen Angus cattle were imported from Scotland.

Editorial.

COTTON.

We have come into possession of a letter written by a Carolina planter, dated at Liverpool, England, December, 1868, and addressed to the *Charleston, S. C., Courier*, and also a postscript written thirteen years afterwards, in November, 1881. The author having seen the results of three years of cotton plauting in the South, immediately succeeding the war, condemns the course usually pursued by the planters, which was leading the most of them to disaster and bankruptcy. Looking at the fact of the emancipation of the negroes, and the influences which impaired their value as hired laborers, he saw that the old method of culture and management could not prevail without great loss. A new system of more intensive planting and farming would have to be adopted. To borrow large sums of money from factors in the cities at a high rate of interest, and to place a lien on the crop before it was planted, to meet the expenses of labor, fertilizers, and for food for man and animals to be supplied from the Western States, without counting the hazards of the seasons, was the old system not now to be endured. The letter referred to makes an early protest against it, and we present it as evidence of wise forethought and good judgment. Vain was the hope to make cotton, once said to be *King*, bear such burdens.

In a trip we made to the South in the Winter of 1870, we learned, to our sorrow, how matters were going with the planters. The railroads were constantly bringing from the West supplies of grain, hay, pork and bacon to be paid for by cotton, and the money for this purpose was drawn from commission merchants at a rate of interest, varying from twenty-five to thirty per cent. A merchant in Augusta, Ga., was asked how such interest could be conscientiously demanded? The matter, he said, was simple. The money had to be borrowed by the merchants from the banks at from twelve to fifteen per cent., and the twelve or fifteen per cent. added by the merchants was but a reasonable charge for their risk, for if crops failed, the loss would fall on them to the extent of their notes at bank, if no more. At that time money was scarce and credit much impaired in commercial operations, but the farmer had none at all except by a pledge of his lands and crops at a small fraction of their value.

Great changes have since taken place, and the Cotton States are now becoming the most prosperous and progressive in the Union.

They have learned that they cannot live by cotton-planting alone, and are now producing their supplies of food for man and beast, and in many ways are building up their home industries by manufactures, mining, roads, land improvement, &c.; and these are the great beneficial results which come from the vain effort, with a sad experience, to make the production of cotton "the one thing needful." The lesson is also being learned, that cotton does not demand a broad acreage, but, like other crops, is made most profitable by good tillage and proper fertilization with a surface limited to these conditions. And so this fact becomes more pregnant when it is seen that under a system of intensive culture the crop has more than doubled itself in the last ten years, and at the same time left ample room for the production of food supplies, which were before brought from other sections.

LIVERPOOL, ENG., November 9, 1868.

* * * "Well, I know, Messrs. Editors, that you think this to be a strange way to '*talk cotton.*' Allow me to say that it was once called 'King,' and we should be cautious in the presence of Princes.

"Certainly by this time nearly every planter can look back at his profits, losses and vexations in cultivating cotton. I am sure few would continue it, with the next year's tax, two and a-half cents per pound, and the vexatious labor, if they could find another field for operating. Now, I wish to present that field to them.

"Every man worthy the name of planter knows that when he hires vagabond negroes at a money price to work his depleted fields, buys manures, and goes in debt on the faith of the crop to carry him through the year, that, to say the least, is a precarious business, leaving out of the count, bad seasons, low prices, high taxes, caterpillars and thieves. With such prospects, who can hold that energy necessary to success. It must be some of those who do not think. Indeed, I am sorry to add, that the most practical answer has been taught to many by the sad experience of the past three years, and left many behind hope or thought on the cotton subject for the future.

"I will show up the remedy, which is easy, in my opinion. In the first place, let no one cultivate an acre of land which he cannot calculate clearly to pay a profit without manure, or that which is made on the plantation; have but few laborers, and those personally known to be of good character and industrious; then to be certain before he plants a seed of cotton, to plant enough grain to insure a home supply; and as the negroes will not live with live hogs, but must have the meat, add to his written contract the authority to hold the cotton crop for three months after Christmas to pay hire, and if possible secure only a crop of one and a-half millions of bales of cotton, which will pay the producers largely more than if they attempted to make three millions of bales the old way, and verify my assertion that poor men can be rich if they choose to be. The planters have this thing

perfectly in their power, and surely they might be as smart as the Negro Loyal League, which spreads over the whole country secretly as if by magic. I say the planters have it now in their easy power to make the same parties row them down Salt river, who rowed them "up" last season. Manufacture all the cotton you can at home; if no mills, use the old spinning-wheel. You do not need much cloth now. Where is that false patriotism which has caused so many nations to use their own coarse materials, rather than buy fine ones, and that too, just to spite their neighbors? Really, we can do so, because our poverty justifies coarse cloth. Fie on the man who bought corn all last Summer from East Tennessee to feed his laborers (the writer did it), and these East Tennesseans took his cotton money willingly to pay for their corn; but I am not sure that they would give the poor rebels a bushel if they were starving for it.

"Well, newspapers, Neil & Co., and other circulars put strange notions in people's heads about cotton, the big crops to be made everywhere else, and that England can do without a bale of American cotton. The writer has had letters to that effect, 1866 and 1867, from England. Allow him to say, this is not a fact, and, that he almost knows if fifty cents per pound could produce no more cotton in India, Egypt and Brazil, than has been showed up, how can twenty cents the pound be expected to increase the supply?

"The three thousand millions invested in cotton machinery on the Continent must be fed, as well as the operatives dependent on it; and whilst I acknowledge that we are slaves to our former slaves, shall we tamely submit to continue even our children as the hewers of wood and drawers of water to cotton lords and speculators? I repeat again it will be our own choosing, and that he who will go stumbling on the old system to produce and continue these results, justly suffers.

"Let us make our own manures until we make money to buy and pay for the foreign; we will then get it purer and it will be surely profitable. Things are changed; we are no longer compelled to make more cotton to buy more negroes to wear out more lands.

"PLANTER.

"POSTSCRIPT.

"November 27th, 1881. Just thirteen years are numbered with the past, and the great Atlanta Ga., Cotton Exposition (the first ever held anywhere before) is in its second month. Amongst the lions, at the show and in the newspapers, is Mr. Jones, who, on the old system of farming cotton, had become bankrupt; but, by the wonderful common-sense change in his tactics—that is, by reducing his number of acres cultivated to the capacity of two mules and within the compass of his labor and capital—he, in a short time, had worked out of the quagmire of debt (seven thousand dollars), and is now independent. This is also the case with many of his neighbors, who followed his example. Mr. Furman, of Georgia, recently deceased, in the past six years has proved my theory of intensive farming.

"Thirteen years since, when I wrote to the planters to do as Mr. Jones has done, they could not expect less than twenty cents per pound for their cotton. Mr. Jones has sold at ten cents, paid off his debts, and has gotten rich, and this, too, while the crop reached five or six millions of bales.

"The natural business of man is to cultivate the earth and subsist on its produce. The wise know and enquire, says the Indian proverb, but the ignorant know not even what to enquire for.

"Ignorance must be the main cause of the want of profits and success in farming in the Southern States, to a great degree, before the war, and even since.

"Indeed, I am induced to believe that a majority of them have no system; no accounts, and no calculation of the cost of producing a crop of cotton. They do not seem to consider what sum the crop made will net in money, nor do they take into their account that a few acres of good land, well cultivated, are almost certain to leave a profit, whilst too much land, badly cultivated, is sure to leave a loss.

"They borrow and buy at a disadvantage, they sell at a disadvantage, and, like the unthrifty, do everything at a disadvantage. The majority are so hard pressed for money that they are compelled to hurry their crops to market. Thus, as supply and demand rules the value of every article of produce, the markets are crowded with cotton, the price goes down; and, if there be a reaction before the season closes, the speculators only get the benefit of it.

"I agree that I am not much of a farmer, that my first lesson was learned in my boyhood, from the frontis-piece on Cottom's Virginia and North Carolina Almanac. A man holding the handles of a plough, with the motto, "He that by the plough would thrive, must himself either hold or drive," and again, in Skinner's Plough, Loom and Anvil, and Ruffin's Farmer's Register, I read in these books, that thorough draining, deep ploughing, and thorough cultivation, were the secrets of good farming. I had tried it for forty years, when I attempted to advise and write in regard to cotton, and after thirteen years, I find out by Mr. Jones and Mr. Furman, of Georgia, that I was correct in this thing.

"PLANTER."

INDIA AND THE WHEAT SITUATION.

We have before us a copy of *Bradstreet's*, of January 12th, which reached our table when we were under medical treatment. The subject of the relation of wheat production in India to that of the United States is so well discussed in the copy of the journal we have mentioned by Mr. *Bookwalter*, a recent traveler and intelligent observer, and is one of such vital importance to the farmers and commercial men of this country, as to deserve serious consideration. Its length only prevents us from publishing it entire, but some of its main points may be mentioned.

The first and leading one is, that India is now rapidly becoming a competitor of the United States in the export trade in wheat to Great Britain and European countries; and in proportion as this competition is successful our exports will be diminished and prices reduced. The argument that India may become a formidable competitor is deduced from observed facts. The adaptation of its soil and climate to the production of wheat, and a large capacity therefor, is made significant by such facts as these: "Although the Indian farmer plows his ground with a forked stick, and employs in all respects the crudest methods of tillage, he succeeds under these conditions in raising a little over eleven bushels per acre, varying but little from the average yield of this country, where we have all the appliances of science and skillful methods of farming." It is also stated that India has over 150,000 square miles of land adapted to wheat, but not now cultivated, whilst the *Punjaub* has over 30,000, the *Northwest Provinces* and *Oude* over 50,000, and the *Central Provinces* and *Bombay* have nearly 60,000 more, or a total of 290,000 square miles. That this vast territory will ultimately, and at no distant period, come under cultivation, must be admitted. The British Government is active and liberal in its efforts to promote the agriculture of its eastern provinces, as may be seen by the fact that it has now a well established *School of Agriculture* at Madras, as also an *Experimental Station;* and we may be pardoned for saying that they are both regular subscribers to the *Planter.* Through these organizations the Government is also liberally sending out from England improved implements, and gratuitously distributing them amongst the ryots, or farmers. More than this, some of the enterprising manufacturers of the United States are finding a market for their agricultural implements and machines in this far-off country. What has already been accomplished in respect to production is seen from the statement that "during the last and the present year India has shipped 80,000,000 bushels of wheat, representing $100,000,000 of value at the port of New York." If the value of exported wheat from India has reached these figures, it is easy to comprehend how it may be largely increased by improved methods of culture on lands now tilled, and by bringing under cultivation the large areas mentioned; and when the fact is remembered that the inhabitants are not a wheat-consuming people, but subsist mainly on rice and millet, the surplus for export is largely increased thereby. On the other hand, the American people are large wheat consumers, and fully three-fourths of our crop are required for bread and seed. It is plain, then, that Great Britain and the European populations must draw their deficits in breadstuffs mainly from North

America at the West, and India at the East, and how the United States will stand in respect to the competition is the important question presented in the article in *Bradstreet's* we are now noticing. We quote from it the following paragraph, which forcibly portrays the importance of our great agricultural interests and the necessity of guarding and promoting them:

"The importance of guarding the great agricultural interest of this country with jealous care is manifest from a brief retrospect of that industry for the past ten years, revealing what a mighty factor it has been in the maintenance of the commercial prosperity of the nation. Not only have the farmers and planters of the United States raised for home consumption in that period $20,000,000,000 worth of produce, but they have supplied about $6,000,000,000 worth for foreign use. How important a part the wheat crop of this country constitutes of the grand total of exports is shown by the fact that from 1873 to 1883 about one-fourth of the whole value of agricultural exports was made up by wheat and flour. The export of those articles for the period named was over 1,200,000,000 bushels. We may safely calculate that fully one-half of this great aggregate was due to the deficiency of crops in Europe during those years; for taking the average quantity exported a few years prior to 1873, and the present rate of exportation as a joint basis of estimate, the result would be, for ten years, at least 600,000,000 bushels less than was actually sent abroad. The enormous exportation of our products since 1873 created, for the ten years ending with 1882, a balance of trade in our favor amounting to over $1,000,000,000, contrasted with a balance of equal amount against us for the period beginning with 1856 and ending with 1872. It has given 80,000,000 tons of freight to be carried by rail and water eastward, a distance of over 1,000 miles, worth to the carrying companies $400,000,000. It has given a like amount of tonnage from this country to Europe, taxing to the utmost the transatlantic carrying capacity, and yielding, at a low estimate, $400,000,000 to the ocean commerce of this country and Europe. Unfortunately, the United States has been almost wholly deprived of its share in this valuable trade by the unwisdom of our commercial and fiscal policy, which has operated to hand it over to our foreign competitors, more than half of it falling to Great Britain. Further than this, American agriculture has given to the domestic carrying trade of our own country, during the ten years in question, probably 500,000,000 tons of freight for internal distribution. These few salient points only serve to show what a gigantic factor the agriculture of the nation has become in its general economic scheme."

How is the great question in respect to the growing rivalry from India to be fairly met and solved? It is one for the best minds and most patriotic men of the nation. In our own feebleness of thought we will venture on three suggestions:

First. Let the governments of all the States and the Union by wise

legislation encourage and protect agriculture in all its varied departments of crop production, horticulture, stock breeding, dairying, etc.

Second. Every farmer should study and practice the best methods of culture, looking to the improvement of his land, with a fair profit on his crops and a progressive increase in their yield.

Third. The railroads of the country should harmonize with, and not antagonize, each other, and give to the farmers everywhere a fair, just and liberal tariff of freights, which will leave them free to choose their markets and to reach them without undue burdens.

TOBACCO BEDS AND FLIES.

A subscriber asks the following question: "Please state in your April issue what quantity of *Paris green* or *London purple* is proper to be used in mixture with plaster as a top-dressing to plant-beds for the destruction of the tobacco fly?"

We regret to say that we are unable to respond from experience to this inquiry. When we grew tobacco such poisons were not resorted to at all; and if they are used now we do not know it. Upon theory we would say that the remedy would not be efficacious, and if of doubtful efficiency it would be best to let it alone and try something else. The tobacco fly is a very small insect, and would not likely find and take into its stomach enough of the poison to destroy it, unless the quantity applied to a tobacco bed was so great as to be injurious to the plants. Plaster itself, without the poisons named, is a very good remedy whilst it is a good fertilizer. We have used it with success by *dusting* the plants well with it for several mornings in succession whilst the dew is on them. But it frequently happens when the fly is most troublesome, in dry and cool weather, that there is not enough dew to wet the plants sufficiently to make the plaster adhere to them. In such a case, prepare yourself with a large watering pot with a *very finely perforated* nozzle, wet the bed and immediately follow with the plaster. The best way is to let one man lead with the water and another follow with the plaster. When the leaves become encrusted with the plaster, the fly will be obstructed in its work and will leave. Another good remedy is to use cheap snuff, or the dust of old tobacco, and apply in the same way as plaster. Every tobacco grower has his own plan for fighting the flies, and it is not difficult to get advice on the subject, but in many cases the insect gains the mastery. If any reader of the *Planter* knows a sure remedy, we should like to hear from him before the season passes away.

The Southern Planter.

SUBSCRIPTION: $1.25 a year in advance, or $1.50 if not paid in advance.

EDITORIAL NOTES

DOMESTIC ARCHITECTURE.

This is a subject which should interest every farmer who has advanced and advancing ideas. If he desires to improve his lands under a system of improved culture, he cannot disregard or ignore the advantages, comfort, taste, and convenience which attach to neat and well arranged buildings and enclosures. The judgment which directs the plowing, the seeding, and the reaping and mowing, should also comprehend the fact that the fruits of those operations will fail of their full fruition if the barns and stables are imperfect and inconvenient in structure and unsightly in appearance. The same respect for neatness, order, and thorough cultivation on the farm will, and must with most men, inspire a taste for, and a proper appreciation of, the comforts of a neat and convenient dwelling accompanied by corresponding features in all its surroundings. The attractiveness of a farmer's homestead is not restricted to the pleasure and comfort it affords to himself and family, but it sheds a wholesome influence upon his neighbors, and presents an example, when generally followed, which leads to agreeable intercourse and mutual profit. The value of a farmer's property is largely measured by the appearance of the neighborhood in which it is located. Lands may be good, or easily made so, but if they are encumbered with unsightly buildings and dilapidated fences, a purchaser, if one is desired, will pass them by unnoticed, except to condemn them and the people who own them.

There is a prevailing error in supposing that farm buildings which are constructed, or repaired and improved, after models and legitimate rules and styles of architecture are necessarily costly. The quantity of materials which will cost $1,000, if put in a barn-like dwelling, will cost no more if used in the construction of one which will possess architectural order, taste, and convenience. The difference is in the arrangement and handling of the materials. That which may be regarded as ornamentation, and therefore costly, is made up by the judicious use of materials under proper architectural rules. Every farmer is not an architect, and but few, it may be, who have sufficient knowledge of the art to form their own plans; but a small percentum on the cost of a building will secure the services of an architect who will give plans and working drawings which any carpenter can execute. More than this: books of designs and working plans are now published, and can be had at a cost of two or three dollars, which will give an intelligent farmer all the information he will need. In this connection we may state that we have recently received from Messrs. Palliser, Palliser & Co., of Bridgeport, Conn., their *Useful Details* in architecture which embrace working drawings and designs for all classes of work—exterior and interior—and contained in forty plates, each of the size of 20x26 inches. These details are most valuable to carpenters or builders, but at the same time they furnish many valuable ideas to a farmer who desires to improve his grounds by enclosures, gate-ways, trellises for vines,

or to improve his dwelling with porches, verandahs, bay-windows, cornices, etc The simplest cabin, by the exercise of a little taste, with the aid of paint or whitewash, and adding here and there some simple contrivance for convenience or ornament, may be made attractive, and thus give pleasnre to its occupants. It is to encourage a taste for home adornments, pleasnres and comforts, that such publishers as the Messrs. Palliser are furnishing for the use of the people architectural designs which are applicable to the rural homes of the farmers, or to the residences of the dwellers in towns and cities of all grades of wealth. In this respect the residents of cities will generally take care of themselves, but there is a great deficiency in the tastes and desires of the country people. It is to be regretted that this is so, for no country can be regarded as prosperous, and its people intelligent, when the homesteads are nninviting in appearance. Mnch money may be hoarded away, but its possession may generate miserly feelings, whilst a moderate and discreet nse of a part of it for the gratification of legitimate tastes would elevate character and cement the affections of families to the most sacred and dearest of all places—home.

FIRE INSURANCE ON FARM BUILDINGS.

As a seqnel to what we have said of *Domestic Architecture*, it is fitting again to nrge upon the farmers the importance of keeping policies of insnrance on their most valnable buildings. Had we the statistics at hand it might be shown that millions of dollars are lost annnally by the people of the conntry by a neglect of this precaution. Viewed in the nature of a tax, as we have before put it, it is one which should stand side by side with the public taxes. The one comes from law and the obligations imposed by citizenship and are necessary for the snpport of government; but the other, though self-imposed, protects against the hazards of consuming fires, whether they come by accident, the torch of the incendiary, or the lightnings of the clouds. Rather than fail of this protection the farmer should even deny himself the few luxuries which would be necessary, if not bought, to make up the sum required to secure it. What would the merchants and manufacturers of the cities do without this protection? Twenty years, or less, might suffice to bankrupt them. The money received from insurance reëstablishes business, and it often happens that the *losers* are the *gainers*. New stocks of goods replace old and unsaleable articles, new and improved machinery facilitates and cheapens products of factories, and new buildings take the places of old with improvements in plans of construction. If the farmer loses his dwelling or his barn and stables, it is a dead loss, which he is illy able to sustain, and yet the payment of a small annual tax by insurance would pnt back into his pocket *in cash* the value of the property destroyed by a fire, and, like the merchant and manufacturer, he can use it to good advantage in the reconstruction of his building with improvements in style and convenient arrangement.

We therefore say: Farmers insure your best buildings, and in so doing patronize yonr home companies, which you see advertised in the *Planter*. Their responsibility is undoubted, and for this reason the farmers of the State should prefer them; and for the additional reason that their capital is kept in the State and is not taken away, as it is with companies whose charters are received from other States.

A Partial Answer to Mr. Rugg.—We snppose the disease of the two ewes mentioned is the same which is known as *garget* with cows. It affects the lymphatic glands, and writers on animal diseases say that sheep are subject to it. The treatment recommended is this: When the inflammation and other symptoms appear, give an onnce of Epsom or Glauber salts with about a teaspoonful of ground ginger, and bathe the ndder with warm water, and should there be a rising and pus formed, puncture with a sharp-pointed knife and let it ont. After the discharge, wash with

a weak solution of chloride of lime, and with a syringe inject the same solution into the wound once a day. Will our friend, Dr. Ellzey, respond to the inquiries about mares, and amend, if necessary, our response as to the ewes?

We have a communication from Sir J. B. Lawes, Bart, of St. Alhans, England, in which favorable mention is made of the article of Prof. Scott, of Blackshurg Agricultural College, which was published in our February number. We regret that our issue for the present month was so far advanced when Dr. Lawes' article was received as to make it necessary to defer its publication until the next month.

We are indehted to the kindness of three good farmers for their prompt response to the call for information hy a Bedford farmer on the suhject of land improvement by means of pea-fallows. We give our readers and our friend in Bedford the benefit of the experience and views of all three, as the suhject is one on which too much cannot be said.

BOOKS AND MAGAZINES.

The Writings of Dr. Bagby.—In accordance with the wish of the late Dr. George W. Baghy, the undersigned, who were appointed his literary executors, will prepare for puhlication a Volume of Selections from his writings, to be issued during the coming Summer, and to contain from 350 to 400 pages octavo. The price of the book will be $2, and as it will be published by subscription, and the edition will be governed by the number of subscrihers, it is desired that those who wish to secure copies will at once send their names to either of the undersigned.

The literary material left by Dr. Bagby is very large, and if the proposed publication meets with the favor that is hoped for, it will probably be followed by others.

Mrs. George W. Bagby,
Jas. McDonald,
Richmond, Va.

Hand-Book of Tree-Planting; or, Why to Plant, When to Plant, What to Plant, How to Plant. By N. H. Egleston. D. Appleton & Co., publishers, New York. Price 75 cents. For sale hy West, Johnston & Co., Richmond, Va.

The ohject of this book is to treat of planting trees in masses, rather for profit than for ornament. The information it imparts is especially valuahle for use in open or prairie sections of the country. There are many sections in Virginia, and further South, where good timher for fence-posts is scarce. This want may be supplied by planting a few acres with the locust and catalpa, which are quick of growth and the most lasting woods known. To all who are disposed to avail themselves of this suggestion this hook will give proper information as to details in respect to seed, nursery culture, planting out, &c.

Darwinism Stated by Darwin Himself. Characteristic passages from the writings of Charles Darwin, selected and arranged by Nathan Sheppard. D Appleton & Co., New York, Publishers. For sale by West, Johnston & Co., Richmond, Va. Price $1.50.

Every educated person knows of Darwin and his writings. His books are voluminous and have made their impression on the world, and to a degree scarcely equalled by any other author. This publication is designed, as the compiler states, "for those who know but little, or nothing, about his (Darwin's) line of research and argument, and yet would like to obtain a general idea of it in a form which shall be at once authentic, hrief, and inexpensive."

Flowers and their Pedigrees. By Grant Allen. D. Appleton & Co., New York, Publishers. For sale by West, Johnston & Co., Richmond, Va.

This hook appears to be an American reprint from an English author. As its title somewhat indicates, it treats of the evolution of plants from degenerate sources and their full development into the beautiful and useful. To the florist the chapter on the "Daisy's Pedigree," to the horticulturist that on the "Strawberry," and to the farmer that on the "Origin of Wheat" will

prove very interesting. To a seeker into the mysteries of nature the work opens a rich field of thought, and the reader is led on from page to page by an enticing interest in the subjects and the author.

VETERINARY MEDICINE AND SURGERY IN Diseases and Injuries of the Horse, compiled from standard and modern authorities, and edited by F. O. KIRBY. Illustrated with colored plates and engravings. Wm. Wood & Co., Publishers, New York. 1883.

This valuable book, containing 332 pages, is neatly bound in cloth, and comes to us through Messrs. West, Johnston & Co., of this city. Its frontispiece is a beautiful colored engraving of the skeleton of the horse, and every bone and joint is so numbered as to be made plain to the reader. All known diseases of the horse and the most frequent injuries are clearly defined, and the best remedies prescribed. The apparent object of this hand-book is to supply in a concise form a practical manual of the diseases and injuries of the horse, and their treatment, for the use of practitioners of medicine and other intelligent horse-owners.

GRANDPA'S FAIRIES; or, A Peep into the Mysteries of Nature. By R. J. H. HATCHETT, M. D. *Southern Clinic*, Richmond, Va , Publisher.

This is a neat and well printed little book which is designed to interest and instruct children of suitable age. Its conception was that of a grandfather who, around the circle of the fireside, sought to amuse and at the same time instruct his grandchildren. These talks with the little ones are now embodied in the form of a book, that other family circles may be benefited by them. The drift of the publication may be best seen by a few extracts:

"But I hasten to tell you another fairy tale. * * * God in His great mercy has given us a great many fairies, that are all the time working for us, that give us the air we breathe, the water we drink, the fires that warm us, and a thousand other things that we little dream of. * * * He has sent these ministering beings which learned men call *elements*, but I call them *fairies*. They are electricity, oxygen, hydrogen, nitrogen, carbon, &c. * * * I will now tell you about fairy No 2—Oxygen.

"Well, I must tell you that he is a wonderful fellow. Born, or created, long before Adam was; when the first breathing animal was created he was there to give his first breath. You must remember that he (Oxygen) is invisible—most fairies are—that is, you cannot see them. * * * This fairy could not be seen for ages—for many hundred years nobody knew he was about, and was rendering much service. * * * A thousand things he has been doing for the world, without receiving so much as 'thank ye,' until a little more than one hundred years ago, one Dr. Priestly found him out and named him; and since that time mankind has turned him to many uses."

The author, after thus defining his fairies and their characteristics, in a familiar way tells of their wonderful combinations and results produced thereby; and the subject is brought within the comprehension of children as soon as they have learned to read. Another commendable feature of the book is the moral influence which pervades it.

We commend the book to the attention of parents. Price in paper cover, 25 cents; in cloth, 50 cents. For sale by all booksellers.

"No. 40," A Romance of Fortress Monroe and the Hygeia. Second edition. J. W. Randolph & English, Richmond, Va.

This little book comes to our table after we had the opportunity to read a copy of the first edition. That a second should so soon follow is an evidence of appreciation by novel-readers. The author, whom we learn is a young lady of Virginia, has succeeded in producing a story, the characters of which are well drawn; and the incidents are of recent occurrence, and follow each other in a natural and interesting manner.

FOREST LEAVES. By W. W. JOHNSON, of Snowflake, Michigan. A practical work on the propagation and management of trees for forest and ornamental planting. Second edition.

This is really a very valuable book for the purposes indicated. Its illustrations in colors of the leaves of trees by Armstrong & Co., Boston, Mass, are in the highest

style of art, and true to nature. No lover of our native forest or of the so-called ornamental trees should be without it.

BARTHOLDI'S STATUE.—We are indebted to the *Traveler's Insurance Company*, of Hartford, Conn., for a copy of the official engraving of the French Statue of Liberty upon its American Pedestal, to be erected in the harbor of New York. This picture of the great work of *Bartholdi* is 26x36 inches in size, and is in itself a fine work of art, and is prepared especially for the American Press by the Travelers' Insurance Company, which has also contributed largely to the Pedestal Fund. We have seen it stated that this company, in a comparatively new line of insurance, paid to dead and disabled members last year about one and a quarter million dollars.

"WHEN THE VIOLETS ARE BLOOMING" is a pretty ballad, set to music, which we have passed to the hands of an appreciative lady. Published by Spear & Dehnhoff, 717 Broadway, N. Y.

WE have received the following magazines for April, but too late for special notice: *North American Review*, *Popular Science Monthly*, *The Century*, *St. Nicholas*, *Harper's Monthly*, *Godey's Lady's Book*, and *Art Amateur*.

CATALOGUES, REPORTS, &c.

THE UPPER JAMES RIVER VALLEY. Inducements to Settlers, Investors, and Manufacturers, with descriptive list of properties in Virginia. This catalogue is gotten up under the auspices of the Richmond and Alleghany Railroad and the Bureau of Immigration of Virginia—Capt. R. Irby, Commissioner.

CATALOGUE of *Pomona Nurseries* for 1884. Wm. Parry, Parry P. O., N. J. See advertisement in this and other issues of the *Planter*.

DESCRIPTIVE CATALOGUE of Machinery for Cultivating Corn and Cotton. By Sandwich Enterprise Company, Sandwich, Ill.

CATALOGUE of *Mapes Complete Manures*, manufactured by Mapes Formula and Guano Company, 158 Front street, N. Y.

CATALOGUE of English and American books and of the publications of R. Worthington, 770 Broadway, New York.

CATALOGUE of *Oakland Nurseries*, Bowman & Brickbill, proprietors, Forgy, Ohio.

CATALOGUE of *Powell & Douglas*, manufacturers of Star Wood Pumps, Champion Wind Power, &c., Waukegan, Ill.

SEVENTH ANNUAL REPORT of the Commissioner of Agriculture of Virginia. Commissioner Blanton will accept our thanks for a copy of his report. It contains much valuable information for farmers in respect to crops, tobacco plant beds, fertilizers, and an excellent and exhaustive article on carp culture. It contains, also, interesting tabular statements in respect to power used in manufactures in the State, mining, quarries, fisheries, persons engaged in all classes of occupation, with ages and sex, areas of land surface, dwellings and families, &c., &c.

REPORT of the number and values of farm animals, causes affecting wages of farm labor, &c. February, 1884. Department of Agriculture, Washington.

ALMANAC for 1884 and hand-book of *Ashley Phosphate Company*, Charleston, S. C. This publication is humorously illustrated, and contains much valuable information in regard to the South Carolina phosphates. See advertisement in the *Planter*.

ALMANAC for 1884, furnished by the Maryland Insurance Company of Baltimore, is a beautifully illustrated book, suitable for a parlor table and practical use.

NEW ADVERTISEMENTS.

Dr. J. C. Ayer & Co., Lowell, Mass., advertise their proprietary medicines, which are known throughout the world.

Durham Tobacco Company, Durham, N. C., offer their celebrated brands of tobacco and advertise through N. W. Ayer & Son, Philadelphia.

D. S. Morgan & Son, Chicago, Ill., and Toledo, Ohio, through Messrs. Ayer & Son, Philadelphia, bring to the notice of our readers their light draft Reapers in time for the coming harvest.

Jno. Bowers, of this city, one of the largest stove dealers and gas-fitters and plumbers, and dealer in house furnishing goods, is too well known to need a commending word except to those at a remote distance.

C. Lumsden & Son, jewellers and dealers in watches and silverware, are favorably known throughout Virginia and adjoining States. Without exception, probably, Mr. Lumsden has maintained his business for a longer period than any one in the same trade now living in the Commonwealth.

Gordonsville Female Seminary, Prof. J. Wade Shelburne, Principal, is located in a beautiful and healthy section of the State, and deserves a large patronage.

J. M. Thorburn & Co., New York, through Messrs. Rowell & Co., agents, offer Bermuda Grass seed. This is an opportunity for farmers in the Southern States.

Messrs. Ed. Alden & Bros., advertising agents of Cincinnati, Ohio, send us the following:

1. A fifty page book, "Twenty-five Years in the Poultry Yard." By A. M. Lang, Cove Dale Farm, Ky.

2. "The Sugar Cane Hand-Book," of Blymer Manufactnring Company, Cincinnati, Ohio. This is an opportunity for some friends who have written us from North Carolina for information about sorghum.

3. "Practical Poultry Keeping." An illustrated book. By J. M. T. Johnson, Binghampton, N. Y.

4. "Opium and Whisky Habits Cured." By B. M. Worley, M. D., Atlanta, Ga. We are generally inclined to look with distrust on specifics of this kind, but as it comes through one of the best known advertising agencies in the country, we can but deem it worthy of trial. No greater blessing could be conferred on the world than an efficient and innocent remedy which would create a distaste for opium and alcoholic drinks. The many unfortunates who are slaves of intoxication, when their judgments and noblest instincts are powerless to arrest them in a downward progress, would be restored to health, happiness, and usefulness by such a remedy; and if there is such an one, every man, woman and child should rise in a grand acclaim of praise.

H. A. S. Hamilton, of Fisherville, Augusta county, Virginia, advertises his stock of sheep and hogs. There is not a more reliable breeder in the State, or more prompt and correct in his dealings. His name is familiar to the readers of the *Planter*. Send for his catalogue.

Powell Brothers, Springboro, Pa., for the first time advertise in the *Planter* their valuable stock. They are large importers and breeders of Clydesdale, Percheron-Norman, English Draft Horses, Trotting bred Roadsters, Coachers, Shetland Ponies, Holstein and Devon Cattle. We have frequently called the attention of our readers to the importance of breeding from the heavy French and English horses. They are the best for wagon and coach draft and for the plow. Negroes and mules were the best drivers and draft animals for the farm in years gone by, but the white man and the horse are best adapted to each other. With free labor there must be a large increase of horses in the South, and the Clydesdales and the Normans, with their crosses, will best supply this demand. We have been promised by the Messrs. Powell details of their stock at their "Shadeland"

farm, and when we receive them may be able to say something further.

ROBERTSON & CONRAD, Gordonsville, Va., are the manufacturers of the celebrated white oak, or spit-bottom, chairs. Such is the ease and comfort of these chairs that they are held in high repute for common use in the best furnished houses of the cities. This firm also grind and furnish plaster for farm use, lumber, &c., for building.

TESTED SEEDS.—It is seed that some seed houses are carrying over large stocks of seeds from last years surplus, which they will offer for sale this year. The only safety against bad stocks is to deal with thoroughly reliable houses, and we believe that Sibley's Tested Seeds are as good as the best. Our readers should send to Hiram Sibley & Co., at Rochester, N. Y., or Chicago, Ill., for their catalogue and price-list of tested seeds.

THE MONARCH MANUFACTURING COMPANY, through C. H. Fuller, advertising agent, Chicago, Ill., bring to the attention of farmers their Horse-hoe and Cultivator combined. This is said to be the latest improvement in agricultural implements, designed for hoeing (with horse) potatoes, corn, cabbage, turnips, beets, &c. Read their advertisement.

CHINA AND JAPAN ART SEEKING COMPANY, Louisville, Ky. This seems to be a peculiar name, but it is made significant by their bazar of Chinese and Japanese wares, which display the wonderful art and skill of people generally regarded as heathen.

GEO. L. SQUIER, Buffalo, N. Y., through S. H. Parvin's Sons, Cincinnati, Ohio, advertise mills for grinding sorghum and other cane.

J. H. FINNEY & BROTHER, Richmond, Va., are dealers in lamps, oils, &c. We can commend these boys, for they are both under age, to the public. They deserve encouragement, not only for a manly effort to make a living, and we hope a fortune, but for their personal worth. It is rare that two brighter, more intelligent and well mannered young men are met in the walks of business.

Twin Foes to Life

Are **Indigestion** and **Constipation.** Their primary symptoms are among the most distressiug of minor human ailments, and a host of diseases, speedily resultant from them, mutually aggravate each other and assail at ouce the whole machinery of life. **Nausea, Foul Breath, Sour Stomach, Dizziness, Headaches, Bilious Fever, Jaundice, Dyspepsia, Kidney Diseases, Piles, Rheumatism, Neuralgia, Dropsy,** and various **Skin Disorders,** are among the symptoms and maladies caused by derangement of of the stomach and bowels.

A Thorough Purgative

medicine is the first necessity for cure. Then the cathartic effect must be maintained, in a mild degree, just sufficient to prevent a recurrence of costiveness, and at the same time the liver, kidneys and stomach must be stimulated and strengthened.

Ayer's Pills

Accomplish this restorative work better than any other medicine. They are searching and thorough, yet mild, in their purgative action. They do not gripe the patient, and do not induce a costive reaction, as is the effect of other cathartics. Withal, they possess special properties, diuretic, hepatic and tonic, of the highest medicinal value and

Absolutely Cure

All diseases proceeding from disorder of the digestive and assimilatory orgaus. The prompt use of AYER'S PILLS to correct the first indications of costiveness, averts the serious illnesses which neglect of that condition would inevitably induce. All irregularities in the action of the bowels — looseness as well as constipation — are beneficially controlled by AYER'S PILLS, and for the stimulation of digestive organs weakened by long-continued dyspepsia, one or two of AYER'S PILLS daily, after dinner, will do more good than anything else.

Leading Physicians Concede

That AYER'S PILLS are the best of all cathartic medicines, and many practitioners, of the highest standiug, customarily prescribe them.

AYER'S PILLS,

PREPARED BY

Dr. J. C. Ayer & Co., Lowell, Mass.

[Analytical Chemists]

For sale by all Druggists.

WORTHY

Of Confidence.

AYER'S Sarsaparilla is a medicine that, during nearly 40 years, in all parts of the world, has proved its efficacy as the best blood alterative known to medical science.

SARSAPARILLA (extracted from the root of the genuine Honduras Sarsaparilla) is its base, and its powers are enhanced by the extracts of Yellow Dock and Stillingia, the Iodides of Potassium and Iron, and other potent ingredients.

IS your blood vitiated by derangements of the digestive and assimilatory functions? is it tainted by **Scrofula? or** does it contain the poison **of** Mercury or Contagious Disease?

THE leadiug physicians of the United States, who know the composition of AYER'S SARSAPARILLA, say that nothing else so good for the purification of the blood is within the range of pharmacy.

ONLY by the use of this remedy is it possible for a person who has corrupted blood to attain sound health and prevent transmission of the destructive taint to posterity.

THOROUGHLY effective renovation of the system must include not only the removal of corruption from the blood, but its enrichment and the strengtheniug of the vital orgaus.

RELIABLE witnesses, all over the world, testify that this work is better accomplished by AYER'S SARSAPARILLA thau by any other remedy.

BLOOD that is corrupted through disease is made pure, and blood weakened through diminution of the red corpuscles is made strong, by AYER'S SARSAPARILLA.

PURIFYING the blood and building up the system require time in serious cases, but benefit will be derived from the use of AYER'S SARSAPARILLA more speedily than from anything else.

MEDICINE for which like effects are falsely claimed, is abundant in the market, under many names, but the only preparation that has stood the test of time, and proved worthy of the world's confidence, is

Ayer's Sarsaparilla,

PREPARED BY

Dr. J. C. Ayer & Co., Lowell, Mass.

Sold by all druggists: Price 1; six bottles for $5.

POULTRY.

The *Planter* has not heretofore been able to devote the space and attention to an important domestic interest which it deserves. To meet the growing demand for thoroughbred poultry and all the best information in regard to its management, we have arranged with the proprietors of the *Poultry World*, of Hartford, Conn., to supply the readers of the *Planter* with their new monthly publication, known as the *Poultry Post*.

We therefore propose to send to each *new* subscriber the *Planter* and the *Poultry Post* for one year for the sum of $1.50, payment to be made in advance; and for the same price will send both papers to all the existing subscribers of the *Planter* who are not in arrear, and will pay in advance for one year. Their accounts may be settled, and then the advance payment made.

Address,

SOUTHERN PLANTER.

mh 3t

ANIMAL LABELS.

We have a number of Animal Labels, made by C. H. Dana, West Lebanon, N. H. They were taken in payment for an advertisement, and, having no use for them, will sell them at twenty-five per cent. off Mr. Dana's list of prices.

The Labels will be properly stamped with name and number, and forwarded by Mr. Dana to a purchaser.

Orders should designate whether Labels should be required for cattle, hogs or sheep.

Address,

SOUTHERN PLANTER.

mh 2t

THE NEW ENGLISH COMPANY,

FOR THE

Sale and Purchase of Land in Virginia,

Have many enquiries for the purchase of farms and real estate, and have already made extensive sales at good prices. Those wishing to sell or buy land, or farm property, should apply at once to G. B. Lynes, Ivey depot, Albemarle county, Va.

Parties wishing to look at farms can be boarded by advertizer.

G. B. LYNES.

mh 6t

PLANT-FOOD TO MEET EVERY SHADE OF DEMAND.

A crop not well fed can no more do good work than a horse kept on starvation rations, but not a few, following the business of farming, seem to think it can. They spend money on labor and teams to work a big surface, but feed that surface so badly that it utterly refuses to respond at harvest, and disappointment (otherwise called bad luck) is the result. It is folly to accept from a hundred acres what ought to be produced by ten. This is especially the case now, when plant-food, in the most available shape, can be commanded for comparatively so little money. That the farmers of this latitude might have the advantage of this provision, and at a point perfectly accessible to them, the SOUTHERN FERTILIZING COMPANY, of Richmond, arranged, as early as 1866, to prepare fertilizers specially adapted to every staple crop they grew. As raw materials have become, from year to year, more available, and the appliances for their preparation more perfect, the price of the completed articles has been reduced, until now it is possible for a farmer to make a 400-pound-to-the-acre application for no more money than 200 pounds used to cost.

The SOUTHERN FERTILIZING COMPANY will have ready, for the Spring demand, their complete goods, bearing the general name of the

"ANCHOR BRAND"

—FOR—

TOBACCO, COTTON, TRUCKS, PEANUTS & POTATOES.

For CORN and PEANUTS, the unrivalled

"B. P." AMMONIATED,

Also, the

"B. P." (Potash Mixture), and the "F. B." (Flour of South Carolina Bone.)

We will be glad to correspond with intending buyers, or to see them in person, whenever it may be their pleasure to call. If they will tell us what they want to compass we can tell them what to use; and feel sure we can present such figures as will be acceptable to them, *especially for the cash.*

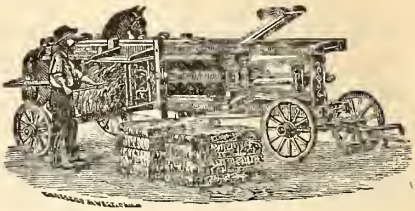
Our Factory covers 2001, 2003, 2005 and 2007 Dock Street, and our office is at 1321 Cary Street, Richmond, Va.

JOHN OTT, Secretary,

fe 3t **Southern Fertilizing Company, Richmond, Va.**

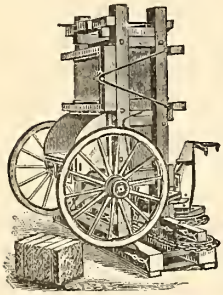
GRAND TRIUMPH IN HAY PRESSES!

ERTEL'S "ECONOMY."



FIRST PREMIUM

At Virginia State Fair, 1883, over the "DEDERICK" and all others.



—THE—

"FARMER'S FRIEND!"

Are the cheapest; will bale hay at less expense; load more in railroad car than any other; so warranted or no sale. Send for illustrated circular.

NO COG WHEELS! NO COMPLICATED PARTS!

RAPID IN WORK. DURABLE!

ASHTON STARKE, Agent, Richmond, Va.

WE CHALLENGE THE WORLD TO A TRIAL!

[feb 3t]

CARROLLTON HOTEL,

BALTIMORE, LIGHT AND GERMAN STREETS, BALTIMORE, MD.

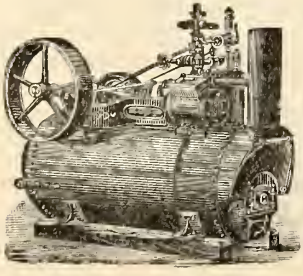
RATES: $4.00, $3.00 and $2.50 per day, according to Location of Room.

Extra Charges for Parlors, Bath and Double Rooms, according to size. The most convenient and latest built Hotel in the city.

ELEVATOR runs continuously to all floors.

All lines of city passenger cars pass its doors. Electric Light used.

feb **F. W. COLEMAN, Manager.**



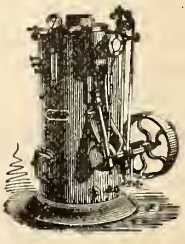
BOOKWALTER ENGINES.

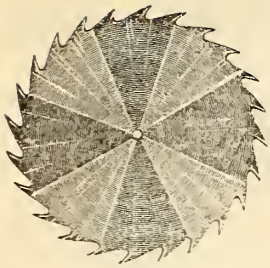
UPRIGHT ENGINES: 3 Horse, 4½ Horse, 6½ Horse and 8½ Horse Power. Safe, Simple and Durable. Over 3,000 in successful operation.

New Style 10 H. P. Horizontal Engine.

Center Crank Engine. All wrought iron Return Flue Boiler. Compact, Substantial and handsomely finished. Illustrated Pamphlet sent free. Address

JAMES LEFFEL & CO.,
SPRINGFIELD, OHIO.
Eastern Office: 110 Liberty St., New York.





G. P. HAWES,

(Successor to MILLER & HAWES),

SOUTHERN SAW WORKS,

Circular and other Saws, Machinery, Edge Tools, Tobacco, Straw-Cutter, Book-Binding, Planer, and Other Knives.

18 and 20 south Fifteenth Street, Richmond, Va.

Burnt Saws Repaired. [no 3t] *Special Attention to Repairs of all kinds*

BELMONT STUD & STOCK FARM

Was commenced in 1847, and has been continuously improved, and two grazing farms added, with the kind of stock my experience has adopted as best suited to our country's wants. I have bred only from stallions or mares of my breeding or importation, and suited to the wants of any section, and will sell any of above of three years old and over, and in plain, unpampered condition, will let stallions, if not sold on safe business terms, for seasons of 1884. I have bred of several breeds of Cattle, but of late years *only the Pure Shorthorns*, and have all ages for sale, especially young Bulls, Heifers and Calves. I breed only the best Berkshire Swine, and have a number of Boar and Sow Shoats and Pigs for sale ; also, White Brahma Fowls and their Eggs. There may be other stock as good, or better, but my experience has settled on these, and I feel that I am doing a public good to forward the propagation of these improved breeds.

S. W. FICKLIN.

Near Charlottesville, Va., Jan. 1st, 1884. ap3ly

BROWN'S GEORGIA

FEED CUTTER.

This machine is constructed on an entirely different principle from any other Feed Cutter in use, and is unequalled in three essentials, viz.:

RAPID WORK, STRENGTH, AND FACILITY IN SHARPENING THE CUTTERS.

They are made for both hand and power, and surpass any other machine for light running. It cuts cornstalks, ensilage, hay and straw with equal facility.

Orders addressed to the undersigned, or any information desired regarding this machine, will secure prompt attention.

MOSES & CLEMONS,

Richmond, Va., Nov., 1883. *General Agents for Manufacturers.*

[de 6t]

ASHLEY PHOSPHATE CO.

——::CHARLESTON, S. C.::——

FLOATS AND KAINIT MIXTURE of best materials, thoroughly mixed by machinery, containing Bone Phosphate, 25 to 30 per cent.; Sulph. Potash, 12 to 14 per cent., besides Magnesia and Soda and Lime, &c.

SOLUBLE GUANO— ... ... Highly Ammoniated.

DISSOLVED BONE— ... ... Very High Grade.

ACID PHOSPHATE— ... ... For Composting.

ASH ELEMENT— ... ... For Cotton, Wheat, Peas, &c.

FLOATS—Phosphate Rock, reduced to an Impalpable Powder by the Duc Atomizer, of Highest Grade. SAMPLE sent on application.

SMALL-GRAIN SPECIFIC—Rich in Ammonia, Phosphoric Acid, Potash, Magnesia and Soda.

GENUINE LEOPOLDSHALL KAINIT.

The above FERTILIZERS are of very high grade, as shown by the *Official Reports* of North Carolina, South Carolina and Georgia.

For Terms, Hand-Books, Agricultural Primers, and good Articles on Floats, Peas and Ash Element, Kainit, &c., address the

ASHLEY PHOSPHATE COMPANY.

N. B.—Special inducements for Cash Orders. Special Formulas made carefully to order of best materials. [ja 1y]

ESTABLISHED IN 1870.

STONO-PHOSPHATE COMPANY,

CHARLESTON, S. C.

WE OFFER TO THE PLANTERS

SOUTH CAROLINA PHOSPHATE ROCK

GROUND TO A POWDER AS *FINE AS WHEAT FLOUR*—

"PHOSPHATE FLOATS,"

FOR APPLICATION TO

GRAIN, GRASSES, AND FOR COMPOSTING.

The Rock is subjected to FREQUENT ANALYSIS by the Company's Chemist, and is of the BEST QUALITY.

For TERMS, etc., address the Company.

SAMPLE sent by mail upon application.

de12m

American Fertilizing Company, Box 677, of Norfolk, Va.

IMPORTERS OF GUANOS AND CHEMICALS AND MANUFACTURERS OF HIGH-GRADE AND STANDARD SUPERPHOSPHATES,

No. 163 and 165 Water Street, Norfolk, Va.

C. L. UPSHUR, President. W. J. ROBINS, Secretary.

UPSHUR'S STANDARD 10 PER CENT. AMMONIA GUANO.—This is one of the very highest grade guanos on the market, and will grow any crop as quick and give as large a yield as any Peruvian guano, no matter what grade it is, and claims to be second to nothing in the market. It is especially fine for top-dressing, or used in any way Peruvian is used, and good on all crops. It is made of the highest grade and finest materials. Analysis: 10 per cent. ammonia, 16 to 20 per cent. bone phosphate, 2 to 3 per cent. potash.

UPSHUR'S STANDARD 7 PER CENT. AMMONIA GUANO, OR SPECIAL IRISH POTATO GUANO.—This guano has excelled the Peruvian guano whenever used in competition with it, and is prepared especially for the Potato Crop. It matures the potatoes earlier, produces more and a superior quality, costs $15 to $20 per ton less than Peruvian, and permanently enriches the soil. In the finest mechanical condition, and is very bulky. Analysis; 7 to 8 per cent. ammonia, 16 to 20 per cent. bone phosphate, 2 to 3 per cent. potash.

UPSHUR'S PERUVIAN MIXTURE, ESPECIALLY FOR COTTON, TOBACCO, &c., &c.—This is prepared from bone flour, fish and Peruvian guano, and is one of the best preparations for cotton on the market. Analysis: 3 per cent. ammonia, 15 to 20 per cent. bone phosphate lime, 1 to 2 per cent. potash.

We keep on hand the best Peruvian guano, in its natural state, and guarantee it perfectly pure and of the highest grade. We also offer for sale Lobos's Guano, Standard Analysis. Also, all kinds of Fertilizing Chemicals, such as Sulph. Ammonia, Nit. Soda, Sulph. and Muriate Potash, Kainit, Bone Dust, Pure Fish Scrap, Fine Ground Fish, South Carolina Acid Phosphate, &c., &c. Our President is an experienced manufacturer of guanos, also a practical farmer, and employees of the Company are practical and experienced fertilizer manufacturers and dealers.

AMERICAN FERTILIZING COMPANY,

mh 3t **C. L. UPSHUR, President.**

1884. SEASON. 1884.

POCOMOKE.

(Super-phosphate.)

The great tobacco fertilizer, produces the brightest and best tobacco, while it permanently enriches the soil.

FISH HAWK GUANO,

For Wheat, Corn, Oats, &c.

Universally regarded as *the fertilizer* for these crops.

We guarantee these brands absolutely free from leather, wool waste, hoofs, horns, or any of the cheap and worthless materials to be found in many brands now on the market. Our goods do not contain *one ounce* of cheap stuff. We use only the purest and best materials, and wherever POCOMOKE and FISH HAWK have been used, they have taken the lead. Correspondence solicited.

FREEMAN, LLOYD, MASON & DRYDEN,

Manufacturers, Norfolk, Va.

W. D. TOMPKINS & CO., Agents, Richmond, Va.

mh 3t

GOLD for the working class. Send 10 cents for postage, and we will mail you *free* a royal valuable box of sample goods that will put you in the way of making more money in a few days than you ever thought possible at any business. Capital not required. We will start you. You can work all the time, or in spare time only. The work is universally adapted to both sexes, young and old. You can easily earn from 50 cents to $5 every evening. That all who want work may test the business, we make this unparalleled offer: to all who are not well satisfied we will send $1 to pay for the trouble of writing us. Full particulars, directions, etc., sent free. Fortunes will be made by those who give their whole time to the work. Great success absolutely sure. Don't delay. Start now. Address STINSON & Co., Portland, Me. fe 1y

For Sale.

JERSEY RED PIGS,

Two Months Old, Each, $4.

Each additional month of age, $1.

C. R. CULLEN,
1305 Main St., Richmoud, Va.
mh 3t

SEEDS,

Garden, Flower and Field Seeds.

Red, White Alfalfa and Alsike Clover Seeds, Timothy, Orchard, Blue, Red Top and Hungarian Grass Seeds, Millets, &c.

Prices as low as any reliable seed-house in the States. Send for Descriptive Catalogue. Trade price-list furnished on application.

CHAS. C. McCOLGAN & CO.,
Cor. Light and German Streets, Baltimore, Md.
Opposite Carrollton Hotel.
mh 3t

Jersey Red Spring Pigs

From Largest Herd South.

Also Sows in Pig. All our breeding stock will be recorded in the "Duroc-Jersey" Herd-Book. Send for catalogue to T. LOVELOCK & CO.,
ap tf Gordonsville, Va.

BERMUDA GRASS SEED.

We have a limited quantity of Seed of the above most valuable Grass for our Southern States. From 8 to 10 pounds of seed to the acre, which must be sown only during hot weather. Per pound, by mail, $2; reduced rate in large quantities; catalogues free. J. M. THORBURN & CO., 15 John Street, New York. ap 1t

C. LUMSDEN & SON,

823 Main Street, Richmond, Va.

Fine Watches, Jewelry,

Clocks, Spectacles, Wedding Rings, &c.

[ap 1y]

OPIUM and WHISKY HABITS cured at home without pain. Book of particulars sent Free. B. M. WOOLLEY, M. D., Atlanta, Ga.
ap 1y

F. STEARNS' No. 1 TOBACCO FERTILIZER.

To the Farmers of Virginia:

We continue the manufacture of this superior Fertilizer, for the reason that those who have used it continue to send their orders. Our formula is—

1200	pounds	Bone Meal, 60 per cent. dissolved by acid.
600	"	Ground Fish.
100	"	Potash (Muriate, 80 per cent.)
100	"	Ground Plaster.
2000	pounds.	

These materials are purchased by us in their raw state, and ground and mixed by ourselves—their combination being known to be perfectly free from all adulterations.

We can confidently recommend this fertilizer as peculiarly adapted to all *spring crops, particularly tobacco*, not only as entering into and forcing the growing crops, but leaving a large residuum of Bone Phosphate, than which there is no better permanent manure for the land. Price of the fertilizer, $40 per ton; Price of pure Bone Meal, $38 per ton. Delivered on board cars in Richmond. STEARNS & HALSEY, 15 south 15th street.

[mh 3t]

All my Seed is warranted to be fresh and true to name, so far that should it prove otherwise, I agree to refill orders gratis. A large part of the great collection of Seed I offer is of my own growing. As the original introducer of Eclipse Beet, Burbank Potatoes, Marblehead Early Corn, the Hubbard Squash, and scores of other new Vegetables, I invite the patronage of the public. In the gardens and on the farms of those who plant my seed will be found my best advertisement. Catalogues FREE to all.

JAMES J. H. GREGORY, SEED GROWER, MARBLEHEAD, MASS.

R. B. CHAFFIN, JAS. B. HARVIE. R. H. GILLIAM.

R. B. CHAFFIN & CO.,

REAL ESTATE AGENTS & AUCTIONEERS

Large Quantity of City Property and 600 Farms and Mills For Sale and Exchange. Land Shown to Buyers Free. Purchasers Introduced to Owners.

Property in City and Country sold privately or by auction. Rents collected and advances made thereon. Money loaned on Real Estate in the City or Country. Deeds written and acknowledgments taken. Write for FREE Real Estate Journal. The largest advertisers of Real Estate in America, except Western Railroads.

Reference by permission, First National Bank.

No. 1 N. Tenth Street, Richmond, Va.

To give our readers some idea of the extensive business we have built up, we present an exact picture of, perhaps the most conveniently arranged STABLE in Virginia which we have built to accommodate the large number of horses and carriages required in our business. We will give in detail for the benefit of our readers who may have fine horses, a description of this Stable: It fronts 54 feet by 33 feet, divided into two compartments. The Stable proper is 33 feet by 30 feet with eight-foot hall through centre, containing seven box stalls, each having patent mangers, water troughs, elevators for drying bedding during the day and city culvert connections.

The CARRIAGE department is 33 by 24 feet, with capacity for six carriages, harness presses, &c. The first story is 12 feet high, and the second story 10 feet high, with hostler's room, bins for grain, and capacity for storing a year's supply of provender, and their Office has telephonic connection to Stable, which has also burglar alarm attachments.

Ap 1t

T. LOVELOCK & CO.,

Gordonsville, Va.,

Breeders and Shippers of

Registered Devon Cattle,

Jersey Red Swine,

Shropshiredown Sheep and Fancy Poultry.

Send for Circular. Our stock took 73 premiums at the Fairs last Fall. ap tf

---

"BARBOUR" CORN DRILL.

Unequaled for STRENGTH and SIMPLICITY. Drops positively only ONE Grain in a place, *twelve*, *sixteen* or *twenty* inches apart.

fe 4t WASHINGTON, D. C.

HOPE FOR THE DEAF.

Peck's Patent Tubular Cushioned Ear Drums cure Deafness in all stages. Recommended by scientific men of Europe and America. Write for *illustrated descriptive book* and testimonials from doctors, judges, ministers, and prominent men and women who have been cured, and who take pleasure in recommending them. They are unseen while in use, comfortable to wear, and make a permanent cure. Address,

de 5t WEST & CO., 7 Murray St., New York, Agents for South and West.

BLUE WINDSOR PLASTER.

We will furnish at bottom prices prime ground Blue Windsor Plaster, which it would be to the advantage of farmers in this section to buy, on account of its purity.

Corn Meal, Planing and Moulding.

Guarantee satisfaction in every particular. It is hardly necessary to mention the

WHITE OAK SPLIT-BOTTOM CHAIRS.

The Judges at the State Fair said that "they were the finest they had ever seen for the money, and the finish was superior to any of the kind they had ever seen at any price."

Our Chairs secured first premiums at the last Fairs held at Culpeper, Staunton, Lynchburg and Richmond.

Trusting to receive encouragement and patronage in our enterprise, we are, very respectfully,

ap 3t ROBERTSON & CONRAD, Gordonsville, Va.

JOHN BOWERS,

No. 7 Iron Block, Governor St., RICHMOND, VA.

REFRIGERATORS, MARBLE AND SLATE MANTELS,
FRONTS AND GRATES, STOVES FOR COOKING AND HEATING.

Call and examine my elegant show-rooms. ap 3t

ESTABLISHED 1865. STANDARD GUARANTEED.

ALLISON & ADDISON,

MANUFACTURERS OF

FERTILIZERS

"STAR BRAND" SPECIAL COMPLETE MANURES

FOR EACH OF THE FOLLOWING CROPS:

TOBACCO, WHEAT, COTTON, CORN, OATS, VEGETABLES AND GRASS.

Pure Flour of Raw Bone, Acid Phosphate, Ground Phosphate Rock, Sulphuric Acid.

—DEALERS IN—

German Kainit or Potash, Nitrate of Soda, Plaster, &c.

OFFICE—1322 Cary Street.
FACTORY—Opposite Rocketts,

RICHMOND, VA.

☞ *All orders and communications promptly attended to.* fe tf

W. H. PALMER, Pres. B. C. WHERRY, JR., Sec. O. F. WEISIGER, JR., Ass't Sec.

FIRE AND MARINE.

VIRGINIA HOME

Insurance Company,

RICHMOND, VIRGINIA.

Office in Company's Building, No. 1014 Main St.

DIRECTORS.

W. B. ISAACS.	P. W. GRUBBS.	JOHN ENDERS.	EDWARD COHEN.
JNO. C. WILLIAMS.	R. E. BLANKENSHIP.	GEO. K. CRUTCHFIELD.	T. WM. PEMBERTON.
	JAS. T. GRAY.	MOSES MILLHISER.	

seply

INCORPORATED IN 1865.

Virginia State Insurance Co.

OFFICE—1006 MAIN STREET, RICHMOND, VA.

CASH CAPITAL, - - - - $200,000.

Insures Dwellings, Stores, Merchandize, and other property against loss or damage by fire

DIRECTORS.—J. L. BACON, President; THOS. W. MCCANCE, Vice-President. Wm. H. Haxall, James Alfred Jones, A. D. Williams, A. Osterloh.

ROBT. E. RICHARDSON, Sec. BAZIL GORDON, JR., Ass't Sec. JNO. B. GRANT, Solicitor.

☞Agents in all the prominent Cities, Towns, and Villages of Virginia seply

---

Mutual Assurance Society

OF VIRGINIA.

(INCORPORATED 1794)

INSURES BY PERPETUAL OR ANNUAL POLICY.

Office, Cor. of Tenth and Bank Streets.

HERBERT A. CLAIBORNE, Principal Agent.

F. D. STEGER, SECRETARY. T. BOLLING, JR., ASSISTANT SECRETARY.

JOHN BLAIR, COLLECTOR. oct 1y

FARMERS, USE

ORCHILLA GUANO!

The BEST and CHEAPEST for ALL CROPS.

That ORCHILLA GUANO positively and permanently *enriches the land;* that it *increases the crop and improves the quality of the land;* and that it never fails to ensure a *luxuriant growth of grass* for succeeding years, are *facts* which 10,000 farmers, who are using it in the States of Maryland, Virginia, West Virginia and Pennsylvania are willing to testify.

This guano is found on the Orchilla Island, in the Carribbean Sea, and comes to us direct by vessels, and all we do to it on arrival is to screen out the lumps and bag it. Every cargo is analyzed before leaving the Island, and comes guaranteed to us to contain from 35 to 45 per cent. of Bone Phosphate of Lime, and other valuable ingredients.

ORCHILLA IS LOW-PRICED—because we have left off the cost of manufacture.

ORCHILLA IS SUCCESSFUL—because it is NATURE'S own provision for her exhausted fields.

THE CHEMISTS ENDORSE IT.

DR. W. J. GASCOYNE, Chemist of the Agricultural Department of Virginia, certified officially that the commercial value of Orchilla Guano as analyzed by him was $41.12.

DR. WM. H. TAYLOR, State Chemist of Virginia, certified the commercial value of Orchilla as analyzed by him to be $44.12.

DR. C. W. DABNEY, JR., Chemist of the Agricultural Department of North Carolina, officially certified the commercial value of Orchilla as analyzed by him to be $43.97.

HOW TO APPLY ORCHILLA.

The best method of applying Orchilla Guano, when used for corn is, to sow it *broadcast.* The roots of corn extend a long distance from the stalk; hence the importance of fertilizing, not around the stalk, as is done when the fertilizer is put in the hill, but away from it, and this cannot be better accomplished than by *broadcast sowing.*

ORCHILLA FOR CORN.

The sooner this Guano goes upon ground intended for corn the better. Our most successful farmers apply it broadcast in mid-winter—February is not too soon—let it lie until the ground is fit to plow, then turn under, and prepare for corn planting.

Make a liberal application—300 to 400 pounds is not too much. *It is never lost,* for not only will it produce a large yield of *corn,* but it will put the land in good condition for a following wheat crop, which may be safely sown on the same land, after the corn is gathered, without any additional application of any kind of manure; and where the wheat is followed by grass, the effect of the former application of Orchilla will be seen in the production of three or four crops of good grass. In this respect Orchilla far surpasses all *manipulated* fertilizers, whose virtues, if any, are exhausted on the one crop to which they are first applied, any future benefit must be sought from a renewed application. Orchilla, on the contrary, increases the crops by *improving the land;* hence its effects do not end with one crop, but are permanent and abiding.

R. A. Wooldridge & Co., Importers

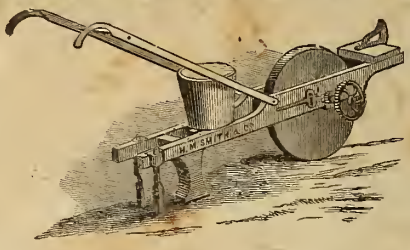
— BALTIMORE, MD. —

TRAVERS, SNEAD & CO., Importers' Agent, 1326 Cary St., Richmond, Va.

We sell Orchilla at a *low price.* Send for our LITTLE BOOK, giving testimonials of farmers who have used it for years.

The Eureka Corn Planter.

Drops Accurately.



Covers Perfectly.

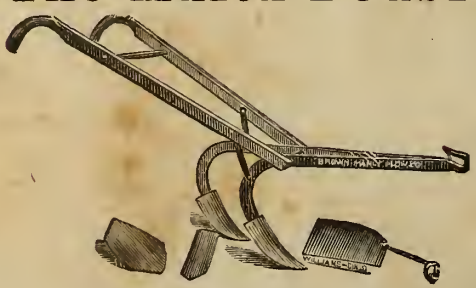
The use of this Planter, invented and patented by H. M. Smith, insures absolute certainty as to the quantity of seed planted and as to the distance between the hills. All Planters depending upon a brush to keep back the corn, are liable to variation. as any press of the seed causes the brush to yield, and increases the quantity dropped. **The Eureka has no brush.** A new and simple device supersedes the necessity of it, and insures *absolute regularity* in the number of grains deposited. The distance between the hills can be regulated at will. The latest improvement in this Planter is the **Narrow Boot or Spout,** instead of the wide as shown above. This improvement lessens the draft, and makes it superior to any Planter ever introduced to the farming community. We can also furnish the farming community with the best TWO-ROW CORN PLANTER, with check rower, and with or without fertilizer attachments; and for transplanting we carry a stock of the best HAND CORN PLANTERS made, embracing the "BROY" and "CHATAUQUA," which stand at the head of the list.

THE IRON AGE CULTIVATOR.

For the cultivation of Corn, Cotton, Peanuts, etc., the use of this implement is indispensable to the farmer, and will pay for itself in a day's use, and with its attachments can be converted into a "HORSE HOE" or CORN COVER at will. We furnish all the different modifications of this Cultivator, and reversible steels of all sizes, from one to nine inches. Beats everything in the market for effectiveness and low price. Light and easily handled. Over 30,000 now in use. *Try it* and be convinced. Be sure to get the genuine trade mark "*Iron Age.*"

"Iron Age" Cultivator.

The Malta Double Shovel Plow.



Buy the Best and Save Money in the Long Run. In presenting these celebrated Plows to the public, special attention is directed to an improvement in the form of an ADJUSTABLE CLEVIS on our Malta Iron Beam Plows, the object of which is better to adapt the implement to variation in the height of team and to deep or shallow plowing. Our cross brace is so arranged that either beam can be moved in or out to suit the plowman, without changing the position of the other, and the handles are easily adjusted to suit the tallest man or a small boy—points of excellence which none other possess. There are already a number of makes of so-called "Malta" Double Shovel Plows in the market, but very seldom any of them prove to be satisfactory. With these inferior plows thousands of farmers have been deceived, and condemn the *genuine* without even having tried one, and to such we would give this advice: *Buy a Plow that is made by the Original Manufacturers*, a well known and responsible company, who have already manufactured and sold nearly 500,000 of these Plows, and cannot afford to sacrifice their reputation for the gain of a few dollars.

In addition to the above Implements for the Spring trade, we would invite special attention to the "BROWN" WALKING AND RIDING CULTIVATORS, unquestionably without a superior. Remember that we sell it with the broad guarantee that it is *the Best Wheel Cultivator in Use*, and this guarantee we stand ready to make good in the field. Those contemplating the purchase of Agricultural Implements of any description, will find it to their interest to examine our stock and low prices before buying. Correspondence solicited.

H. M. SMITH & CO., 1532 Main Street, Richmond, Va., P. O. Box 18,

MANUFACTURERS OF AGRICULTURAL IMPLEMENTS.