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DEVOTED TO

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AND THE

HOUSEHOLD ARTS.

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Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts. Tillage and Pasturage are the two breasts of
—Xenophon. | the State.—Sully.

FRANK. G. RUFFIN, EDITOR.

F. G. RUFFIN & N. AUGUST, PROP'RS.

VOL. XVII.

RICHMOND, VA., FEBRUARY, 1857.

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NEW HAMPSHIRE AND VIRGINIA.

What a New England man really means when he states anything unfavorable to his own country, its inhabitants, or its social system, it is not easy to divine; for the moment you repeat it after him, he fires up and defends himself against himself, not often with the best manners, and very rarely in the best temper. This irascibility may proceed from what outside barbarians fancy they have sometimes observed in this "peculiar people," these Israelites of latter days, to wit: an intense exclusiveness of national feeling, and an assumption of superiority in all things requiring ability, intellect or energy, which commonly amounts to boastfulness, and often to arrogance.

Towards us of the South this feeling is manifested, and this superiority is claimed somewhat more offensively than towards the rest of the world: and if, once in a while, in order to revive our drooping spirits, we venture to draw a parallel between any features of the different systems of North and South, we are met at once, especially if themselves have furnished the materials of the comparison, by "slavery," in some of its aspects, as conclusive of the question. This reproach is deemed not only

the impregnable position of argument, but also the most seemly vent for a bitterness which seeks at once an outlet and a justification.

It has twice been our ill-fortune thus to provoke on the South the taunts of Mr. French of New Hampshire, who is an associate editor of the *New England Farmer*. Once, several years ago, in an address of this gentleman in Maine, he asked, "what are the duties which, by general consent, devolve upon the wives of respectable farmers, aye, and men of all classes" in New England? and answered himself by charging that the husbands there expected their "wives to be at the same time cook and chamber-maid, lady and serving-girl, nurse and sempstress and governess, laundress and dairy-maid," so that by "the sure decay of strength and beauty and life" they are killed at length "by slow consumption."

This address was accredited by the senior editor as "one of the three best he had ever seen;" and was supposed by us to have earned this praise by its candour and philanthropy, its other merits being quite moderate. We innocently published it in order to assure our Southern housewives that their condition was not, by comparison, so unhappy as some of them imagined. The very next number of the *New*

England Farmer brought the reply that we "whipped" black women at the South. We forebore the obvious answer, that it might be no worse to whip a black slave than, by the protracted torture of over-work, to kill a white wife; because we saw no good in such a retort, and could not presume by that, or any other means, to reform the perverted sympathies of Mr. French.

In the November number of *The Planter*, we again used some facts, furnished us by the same authority, in regard to the wholesale desertion of farms in some parts of New Hampshire; and we contrasted therewith the improving condition of the whole of Virginia.

The January number of the *New England Farmer* comes back at us quite scornfully in this wise:

"It was not our intention in writing those letters to convey any idea of lack of ability or energy in our people, or that our institutions do not foster all honest industry. On the contrary, none but men of unflinching courage would have felled the forest and subdued the hard and unproductive lands which they have finally forsaken. The forest, there, was all that could remunerate man for his labor, and when that was exhausted, it would have been wise to allow it to grow up again and cover the nakedness of the land. But if the soil had been like that on the Potomac or James River, that deserted region would now be covered with productive farms and teeming with an industrious, intelligent and independent population. It was folly to battle with gravel banks, or with lands so thickly covered with boulders, as utterly to forbid the introduction of the plow. Cultivation was out of the question. Where the lands were cleared, they were occupied as pasture, with here and there a limited area for the indispensable corn or potatoes.

"But how does it happen that the Virginia lands, deep and rich as they are, free from stones, and once covered with a dense and valuable forest, have 'been exhausted and abandoned?' It could not have been because Nature had not supplied everything necessary for success, for the original soil was all that could be desired, and the climate salubrious and favorable to all the grasses and grains.

"Can the cause be traced to a want of skill in the occupants of the soil, or the influence of any institutions that may exist in that ancient Commonwealth? We know that such 'exhaustion and abandonment' of fields has taken place, and more than a dozen years ago gave some of our personal observations of them in the columns of the *'Planter'* itself. It is probable that some of the families who left the

barren hills of Massachusetts and New Hampshire, may have entered upon the 'exhausted and abandoned' lands of Fairfax county, or those laved by the tides of Chesapeake Bay, or watered by the beautiful James River. If such be the fact, they will undoubtedly set a good example of industry and thrift, and literally make the 'exhausted and abandoned' fields 'blossom as the rose.'"

This, also, we should be satisfied to pass unnoticed, but that circumstances have somewhat changed: abolition is strong enough to threaten destruction to the South or the Union; and conservatism at the North cares not, or dares not to check the madman. This makes it the duty of every son of the South to take up the glove whenever it is thrown down; and therefore we think proper to enter a protest against the facts and conclusions of Mr. French.

In the first place, it is not true that the lands upon the James River or Potomac ever were rich, except the narrow strips of alluvion which lie mostly above tide-water; these lands, as a rule, were poor, and generally are to this day. The alluvions were cleared last because the growth on them was so heavy, because they were subject to water, and probably also because the quality of tobacco they made,—and quality then ruled the market independent of quantity,—was not such as to command the highest price. These latter named lands have never lost their fertility.

But there were other lands in Virginia, generally in small districts, of very superior quality, which were "exhausted and abandoned." The reason was that the price of tobacco was so high, and labour was so cheap, and the work of clearing, which merely girdled the larger trees and burnt the undergrowth, was so slight, that it cost less to abandon one field and clear another than to keep up the condition of each clearing. We have, ourselves, known an instance in which one crop of tobacco was worth more money than the fee simple of the farm. It is obvious how such a state of things must have operated as a premium on exhaustion of land. The first two or three crops, as a general rule, "was all that could remunerate man for his labour; and when that was exhausted, it would have been wise to allow it to grow up again and cover the nakedness of the land." It was a mere question of profit and loss.

Immediately succeeding this state of things

came the commencement of cotton planting, in the further South, which in its general economy was a repetition of tobacco planting, with the same profitable results, and the same consequences to the land somewhat modified by the greater average richness of the lands in the cotton zone, the greater consequent ease in repairing the waste of soil, and the general improvement in rural economy all over the world.

It was a blessing of Providence, if not a direct design, that we should make money enough by subduing the forest to encourage us in the work. Now it is done, or in a fair way to be done; and Virginia, who was one of the pioneers in the work, and contributed millions to it in men and money, is bending her attention to domesticate the lands she long ago subdued; and she will do it. Her three last official valuations, covering an interval of about eighteen years, show a rate of progress on which she might claim the congratulation of her sisters at the North,—if she had sisters there.

We are sorry that we cannot accord to "some of the families who left the barren hills of Massachusetts and New Hampshire" any great share, either by example or achievement, in this work of renovation. Their numbers, however great their skill might be, are too small to affect the average. But their skill is not great. They are good lumber men, good dairy men, good gardeners, good horticulturists. Their forte lies in working small farms with minute attention, and in hauling large loads with well trained oxen; and they are great economists on a small scale. In these things they beat us. This is all the merit we have heard ascribed to them as farmers: such as it is we freely accord it. It could not be expected they should have any other. Brought up on small farms, unaccustomed to control large masses of labour, how could they jump into the large harness of a Virginia farm, and find it work easily and naturally? Exceptions there may be—Robert Edmond is one—a noble one—who works negroes and has a Virginia overseer; but we know of no other: and the rule is as we have stated it. We do not cavil at it, nor protest against it, nor sneer at it. Such men are welcome to live among us, and to make what they can. But they will never make Virginia "blossom as the rose." If proof of these facts and

grounds for this opinion be demanded, we have it at hand in a recent letter from Mr. L. Dederick of Dranesville, Fairfax county,—who occupies an exhausted "Potomacriver" farm,—to the editors of the (Albany, New York,) Country Gentleman. The editors had said that "those who had emigrated to Virginia had not been doing very well." Mr. Dederick says it is, in many cases, too true: and he attributes "the difficulty" "to embarrassments occasioned by purchasing too much land." He goes on to speak of "the errors and difficulties" he had "himself experienced, and which have proved the ruin of others, and the great embarrassment of most of the Yankees who have emigrated here."

Now Mr. Dederick says he has two hundred acres of land, of which he cultivates twenty, and runs a saw and grist mill. This is not considered a very large farm in Virginia; and if that much ruins some and embarrasses most of the Yankee immigrants, it will take rather more than "some of the families who left the barren hills of Massachusetts and New Hampshire" "to blossom" the ten and a half millions of acres in Virginia farms.

The taunt at our "institutions" does not provoke us to discuss the subject with Mr. French. Even if it had not been lately treated in all its aspects so as to render it unnecessary, especially when, as in this case, the argument on each hand could reach only one side, the fixedness of our respective opinions would make it useless so far as convincing either disputant might be concerned. Mr. French believes, and no doubt sincerely, that slavery is the bane of our whole system. We, quite as candidly, look upon free labour as the curse of his. He thinks slavery will ruin the South; we think free labour has already narrowed the doom of the North to chaos or despotism, unless it shall be rescued by Southern conservatism. Whether these respective opinions be the result of one sided views time will show. But meanwhile we may agree to differ without taunts, and be on terms of civil intercourse; just as Russia and the United States find it to their interest to enter into treaties of amity and commerce, though their systems differ irreconcilably. Of governments it may be said, what Fielding wrote of men: "the finest composition of human nature, as well as the finest china, may have a flaw in it; and this, I am afraid in either case, is equally incurable; though, never-

theless, the pattern may remain of the highest value."

Still, Mr. French has thrown the gauntlet at our feet, and we cannot do less than take it up, though no "battel" shall result. If, then, slavery be the cause of the desolation that excites, not, we are sorry to say, his regret, but his spleen; if,—as is asserted by the Germantown Telegraph, extracted at p. 15 of the New England Farmer,—if "not more in a general sense than one-half, or one-fourth of the ordinary labour of a man is obtained from the slave that he is capable of performing;" if the wives of New England farmers work about four times as hard as the women of the slave driver; if we have "our young barbarians all at play" whilst New England children are toiling on the farm or moiling in the factory, how does it happen that the farmers of Virginia are richer than the farmers of Massachusetts and New Hampshire? But let us push this question a step further. The five old slave States have the same population, in round numbers, with the six New England States; our benighted people are sparsely settled, in a deserted region, on "exhausted and abandoned lands;" our business is low in the scale of profits; our labour yields "three-eighths" its just amount; we contribute far the largest share of the Federal revenue; we pay Massachusetts for catching cod-fish and mackerel; we pay New Hampshire for growing wool; we protect nearly every fabric New England makes, and buy, at protected rates, a large proportion of them; we transport nearly all our products in her bottoms; we disburse nearly all the common revenue in the free cities of the North. Now how happens it that with all these advantages on her side, with a dense population of the most enlightened, "most enterprising freemen on earth," reaping the heavy profit of a commercial and manufacturing investment, how happens it, we ask, that the Puritan has less wealth than the Cavalier? On the above data, which abolition and the census furnish, how can it happen but by a degree of intelligence, energy, ability and industry in the master, which we have never had the arrogance to claim for him?

It is no pleasure to us to institute such comparisons. We do it now in no spirit of vain depreciation; we should be false to our

own intelligence were we to detract aught from the merits of New England. Equally at home in the counting-room, in the workshop, or on the deck; the impersonation of enterprize and energy; a model of public spirit, and a paragon of local patriotism; with intellect adequate to her economical emergencies, and courage to explore alike the practical and the abstract; we cannot withhold our admiration from New England. But when we see her also rash in speculation; headlong in progress; eager in traffic; grasping in acquisition; despotic in temper; arrogant in bearing; worldly in spirit, and careless of the character or talents of her leaders, we would qualify our high regard, but that we lack the heart to do it. For already the good ship refuses to obey the helm, and is drifting hopelessly with the tide upon the reakers of anarchy.

SUCCESSIVE CROPS OF OATS—THEIR EFFECT TO DESTROY WILD ONION.

It is a very common opinion that oats is one of the most exhausting of all grain crops. One of the best farmers of Western New-York, informed us that he never permitted this crop on any portion of his farm devoted to wheat or other grain, but only on land otherwise exclusively used for meadow and pasture. Another skilful farmer never raised the crop at all, preferring to buy all that he might need.

We have just conversed on this subject with T. A. Slocum, an enterprising and successful farmer of Perrinton, Monroe Co. N. Y., who entertains quite a different opinion. He has cultivated the crop for many years past on a large scale, and regards it as one of the least exhausting. For the past six years, he has raised from forty to seventy acres. During this period a part of his land has been cropped with it every year, and with a single exception, without any diminution in the amount. This annually-cropped ground has averaged for these six years, sixty bushels per acre, including last year, when, by the unprevented drought, it was reduced to fifty bushels per acre. The land, throughout this period, has netted him (above all expenses) twelve dollars per acre, as an annual average.

Our readers will doubtless feel interested to learn his mode of management. After the crop is harvested, he passes a spring-tooth horse-rake both ways across the field, for securing all the gleanings; but, as he observed, this kind of rake having a sort of "baby-jumper motion" over the field, a considerable portion of the grain is shelled out from the gleanings, and partly harrowed in by the points of the rake. A thorough harrowing afterwards, insures a good growth of oats, which is about

a foot high before winter. Before the ground freezes, the whole is turned under with the plow, in the most thorough manner—serving as a good green manuring.

Early the following spring, the surface is rendered mellow by means of the harrow and two-horse cultivator, and the crop sown, seven pecks to the acre, by means of a grain-drill.

There is no doubt that the annual green manuring assists in keeping up the fertility of the soil; and there may be some kinds of soil including this, that will long bear heavy cropping with oats. It may be questioned however, whether it is good *permanent* policy to pursue this course instead of a more varied rotation. When we have a strong fertile soil, we prefer to *keep* it so, to its fullest capacity, rather than to draw too hard upon it, as even the strongest may ultimately fail. But cultivators of the oat crop, may however derive some excellent suggestions from the practice detailed above.

The above article, which we clipped a few months since from the Country Gentleman, reminds us of some curious facts which we collected sometime ago in regard to successive crops of oats. We shall give here such as we remember. It will be seen that they militate somewhat, not only against the general idea that oats are a very exhausting crop, but, what is of more consequence, against the general theory of the rotation of crops as necessary to repair the waste of different soils, and to increase fertility by fallows crops. Whether that theory is right, universally or generally, is not the point in discussion here. We simply narrate facts as we have collected them.

1. Several years ago in conversation with the late Peter Merewether of the county of Albemarle, whose accuracy as to matters falling within his own observation no one ever thought of questioning, and whose native intellect was of a high order, he mentioned that oats did not exhaust land, that he had known his uncle, the late Capt. Wm. Merewether of Cloverfields—a farm adjoining his own—to cultivate a crop of oats seven years in succession; that so far from exhausting, he had heard his uncle frequently say that he thought the land improved; and that the crop of wheat, which immediately followed the oats, being of course the eighth successive crop, was better than the land would have produced at the commencement of the system.

2. Sometime after that we heard from a gentleman, with whom we were conversing on the subject of wild onion, that the practice of Mr.

Richard Sampson of Goochland was to grow three crops of oats in succession on his fields which happened to be infested with this pest; and that the second and third crops were generally better than the first, the wheat upon the oat stubble being usually as good as he should have expected from the land under ordinary tillage. We subsequently met Mr. Sampson and conversed with him on this subject, and he confirmed the statement of our informant, remarking though, that the oat crop had not entirely eradicated the onion; but it had so crippled it as to make it a small grievance compared with what it had been before.

What was the treatment of the land, as it lay in oat stubble in these cases was not stated; nor did it then occur to us to enquire. But we were so struck with their contradiction to the ordinary opinion, that we sought some neighbour of Mr. Merewether, he having died shortly before, to get a particular statement of what he might have said to any of them on this subject.

3d. The first of his neighbours we met with was Mr. Geo. L. Williams, then living in sight of Mr. Merewether, but now a resident of Fluvanna. He knew, he told us, nothing of what Mr. Merewether had said, but he could give us a fact coming within his own knowledge that might answer our purpose as well. This fact was that his father had cultivated the same field in oats eleven years in succession, grazing the stubble each year into the ground, with what stock he had, turned on always as soon as he could secure the oats. The land was poor—of the quality of that around Lindsey's Turnout in Albemarle, which it adjoined—so poor that no one would have thought of putting it in tobacco without a good manuring. But at the end of the eleven years' oat cropping it was put in tobacco by his father with none, or a very slight manuring, and made a good crop.

4th. Mentioning these facts to N. F. Cabell Esq., of Nelson, he mentioned a case that had been reported to him of a farmer in Buckingham County who had improved part of his land by a similar procedure continued through a course of several years; but he had heard, or presumed—which is not recollected—that it was effected in that case by permitting the stubble of each year to grow up in weeds.

5. About the same time we stated these facts to our friend H. P. Poindexter, Esq., of Spott-

sylvania, who added one to the list, and has recently furnished us with a repetition of it in these words:

"In the year 1840, I commenced seeding my orchard in oats for the benefit of my hogs, turning them on the oats as soon as I discovered the straw yellowing under the head; which I continued until 1854 with a decided improvement in the land. I was prevented by circumstances from seeding the oats in 1854, and by the fall the lot was so thickly set in Virginia blue grass it would have been useless to have fallowed it for oats. To cleanse the land of the grass I put the land in corn in 1854. The crop was greatly better than I had expected, some acres yielding at least 50 bushels to the acre this year, I shall cultivate it in corn again, after which, I shall continue my oats system; by the bye, I would advise you to recommend to every farmer to sow oats for the benefit of his hogs—say about one bushel for every five killing hogs."

The additional time since the statement was originally made is of course included in the above.

6. These facts, and one to the same purport from another source which we remember to have received, but cannot now recollect the particulars of, and which is therefore omitted here, we mentioned about four years ago, at a meeting of the farmers of Virginia, convened in the Capitol to vitalize our present and then new born Agricultural Society. They elicited some discussion, and one additional fact. Mr.

NOTE.—Mr. Poindexter also gives another interesting case of continuous cropping.

"I will now give you another instance of repeated culture on a small lot of high or hill land from which the crops were taken off.

In 1843 I cleared a lot of 6 acres for tobacco; under my system the tobacco was repeated, and was followed by wheat and clover, but the clover crop was an entire failure, I again seeded wheat and clover. The wheat crop was very fine and the next year when the clover matured, the whole lot bedded and the crop was cut off. The clover stubble was fallowed for wheat, and was better than the first and the clover crop following which was cut was equal to any crop I ever saw on high land. Finding the last crop of clover much heavier than the first, I determined I would take off a crop every year until I saw the crop diminishing, which I have done with the exception of two very dry seasons, when the clover would not pay to cut, without the least diminution of either corn or wheat and without the aid of any kind of manure except Plaster. This year I shall put the lot in corn to be followed by wheat; which will be fourteen crops to be taken from the land in 16 years."

Chas. Carter Lee said that his uncle, Mr. Burwell of Roanoke, had told him, in reply to the question, how he had managed so greatly to improve a poor field in front of his house? that he was almost afraid to tell him—but the truth was he had done it by growing oats on the land year after year for—if our memory serves us—eight years.

We have given the names of all the parties above—a liberty we beg them to excuse—because testimony is more impressive when the witness is not veiled, and because we wish them to correct any error in our statements. If they will so correct us they will do us and the public a favour. And if any gentleman can add his testimony to the above an equal favour will have been conferred.

As the case now stands, we have given, including the extract from the Country Gentleman, seven cases in which oats cultivated under all circumstances of soil and after-treatment, have improved, or at all events failed to impoverish, land. The facts possess a scientific value probably above their practical importance. But still one or two valuable practical deductions may be made.

First. It proves that one may have the same lot for hogs for many years. This will enable him to commence the process of fattening—unless he shall previously, and more judiciously, have begun it on clover—at an earlier period than is common, and, by means of green corn fed in the roasting ear, and secured, by successive plantings, in that condition until frost, to continue it uninterruptedly until a short time before killing, which should always, yes always, take place as early in November as the weather will allow.

Second. It will enable a great many to subdue, if not destroy, the wild onion, which frequently causes a loss of 5 to 10 per cent. in the price of wheat, without injuring the land.

Third. It presents a ready means of getting a good fallow on lands apt to bake in summer; as it ensures that the land will not be injured by the growth of oats, whilst it can certainly be fallowed with half the labour. Whilst for hogs, which will harvest it themselves, or for marketing near a city, where the sheaf oats may bear a high price, it is a valuable crop, (provided, in the latter case, the land will bring straw enough to give weight,) yet, as a general rule, whether for market as clean oats, or for

home consumption, we think it, in our climate, just the meanest crop that is made. It is true, there is no better feed for a horse than a plenty of oats; but fed to them in such quantities as they require to do work on, one can make any other forage crop to greater profit. As proof of this we may mention that Mr. Ro. Edmond, who has bought more feed for horses than any other man in Virginia, and who is an adept in his business of James River canal route contractor, has told us that he does not estimate sheaf oats, pound for pound, as equal to hay of any sort.

One thing more, and we have done. Let those who may incline to try the experiment of successive oat crops, whether for hogs or for other purposes, beware of selecting sassafras land for the purpose. Repeated plowings will surely extend and increase the growth of sassafras bushes. We know that by experiment in this very matter.

MEETING OF THE GLOUCESTER COUNTY AGRICULTURAL SOCIETY.

The *Richmond Whig* of January 21, contains the proceedings at the third annual exhibition of the Gloucester Co. Agricultural Society, including the award of premiums, and a handsome address from Dr. Page. We notice it to praise the zeal of the gentlemen composing this society, and to commend their example throughout the State. The premiums are not large and never have been: there is no reason why they should be. The society is a domestic one altogether, and as there is but little expense in getting the articles to the fair, the successful competitors can afford to take small sum in premiums. Indeed they are so small that we presume they are never claimed unless perhaps as a credit against annual contributions. In this view of the case, we suggest, if it would not be better in each case merely to take certificates and leave the money to accumulate for other purposes. All that Mr. Deans, Mr. Curtis, Mr. Page and Mr. Taylor want, is evidence that they have the best articles in their respective ranges of exhibition. Public spirit alone prompts such gentlemen to exhibit.

The money left might be well expended in the purchase of a good agricultural Library; or, it might be increased by additional contributions, and laid out in obtaining good male

animals of approved breeds to be the property of the Society, and kept for their exclusive use. There are other modes in which the money might be very usefully employed. Suppose, for instance, certain gentlemen were selected to make certain experiments, the expense thereof to be defrayed out of the common fund, where it is at all costly, and only two such should be performed in a year? How important in time would the contribution thus obtained, become to the practice of husbandry! What we want is facts accurately observed and reported; so that we shall be able to introduce induction into agriculture, so much of where science is theoretical and its practice empirical. And if half of the counties in Virginia should each make such annual contributions—of only a few facts by each individual society—how rapidly would true knowledge accumulate.

But whether these suggestions are heeded or not, we heartily wish more of our counties would imitate the example. What she is now doing is productive of much good at home in various ways.

OSAGE ORANGE HEDGES.

In a late number of the *Boston Cultivator*, Mr. Sanford Howard, the editor, gives a very unfavorable account of the Osage Orange Hedges which he saw in an extensive western tour which he took last fall. They were either too thin and straggling, or they had too many wide gaps in them. It was, he says, the general opinion that where stone or dead wood fences were at all accessible, that they were cheaper than the Osage Orange or any other hedge plant; the Osage Orange, by the way, not being universally admitted to be the best plant for the purpose.

We agree in his opinion that any form of hedge is not economical in this country. The trouble of trimming, the draft upon the land and crops on each side of the hedge, and the generally indifferent growth of such things forbid their use, economically considered.

As to the Osage Orange we have some little personal experience, and cannot recommend it. On poor land it won't grow; on rich land it inclines to become a tree, and wants severe pruning just when you can't spare the labor.

Still, for certain situations, such as orchards and gardens, where land is not an object, and where you want something which shall be or-

nemental, and at the same time protect the fruit from rogues, a hedge of some kind is a very good thing.

In our climate we rather incline to some of the rose family for this purpose. In the South we have seen the most luxuriant growth of the Cherokee rose,—as it is improperly called, for it is an India rose, we learn—and it does certainly there make an enclosure which a sparrow can not get into nor a hare penetrate. But from an experiment we made with it some years ago we doubt its ability to stand our winters in Virginia, at least as far north as Richmond. But the white, or—strictly speaking—cream-coloured microphylla seems calculated to meet the requirements specified above. It is a rapid grower, will thrive on poor land, is quite branchy and has sharp thorns. We have one now enclosing two acres of garden, and will report progress as it progresses. We think it will gain the necessary size by the time a fence of old field pine will rot down, and will then have taken complete possession of the space the panels occupied. It may still be necessary to fence against stock, but this hedge will be apt to prevent human trespasses.

ENLARGEMENT OF THE PLANTER.

Our proposition to enlarge the Planter has been so favourably received that we have determined to do it. Although we did not ask it, many persons have volunteered to express their approval of the scheme, and their satisfaction with the first number; and one very liberal gentleman urged us to continue and very earnestly proposed to form one of fifty who should guarantee us against loss—an offer which we felt compelled to decline though very grateful for the kindness which prompted it.

But, as we expected, the increased price has lost us some subscribers, though the increased size has also gained a few. To those gentlemen who have volunteered to send us these few we are of course grateful. But we trust we will not be thought greedy when we express a wish for more. A glance at our Subscription Books would satisfy all that the circulation of the Planter is far short of what it should be for the good of Southern Planters in general, and of The Southern Planter in particular. If, as we have often before suggested, each well wisher of the Planter would only interest his

neighbour in its success much will have been done to make it worthy of the cause and the State. It was but recently that a Northern Agricultural Journal spoke of its 125,000 subscribers!!

To those persons who will interest themselves on pecuniary principles in the circulation of the Planter we offer the most liberal inducements—from 20 to 33½ per ct.—as may be seen by reference to our “Terms.”

A DITCHING MACHINE.

Why is there no invention of a good ditching machine? Such a thing is almost universally needed. In the prairies of the West and Southwest they want them that they may make fences out of the ditch banks; in the river lands of the States further South they want them to ditch, drain and dyke, and by this means bring into cultivation the best cotton lands of the world; in the older States we want them for the purpose of ditching and drying wet lands, and of under-draining a vast amount of lands which now do not produce up to half their capacity for want of this kind of improvement, but which would now cost a good deal more in most cases than the lands are worth. They are also much needed as excavators on railroads, and in digging out the foundations of houses which in the large cities, are going deeper and deeper into the ground.

It is really strange that some good implement for these purposes has not made its appearance. We shall be pleased to hear of a good one, and to give public notice of it. We would promise a fortune to the inventor of such a machine but for one thing, and that is, that inventors never seem to thrive, except in the rarest cases. The greatest geniuses hardly ever do. They are generally a little poorer than printers and editors.

MANIPULATED GUANO.

We have received from Dr. Reese of Baltimore, whose advertisement will be seen in our advertising columns, a pamphlet copy containing an account of the ingredients of his guano and his arguments in favour of the particular mode of composition.

Though we dissent altogether from that portion of Dr. Reese's arguments, which, we think, allow undue importance to the phosphates in

the production of wheat, yet we think his compound well worth a trial, because it may be that the perfect pulverization of the guano will make a less quantity of Peruvian answer, and because the phosphates remaining in the land may promote the growth of the peas or clover which should succeed the wheat.

In addition to this, Dr. Reese is the first manure vender who does not make a secret of the ingredients of his fertilizer. We cannot withhold a word of encouragement from a dealer who is *prima facie* honest and above board.

TO ADVERTIZERS IN GENERAL.

We trust our numerous advertizers have no reason to regret having used our paper as a means of introducing themselves or their business to the public. It has become an axiom of all business that it must be advertized; and we have seen somewhere the saying of an old advertizer "that he was as certain and sure as he was of anything in this world, that for every ten dollars spent in advertizing by persons engaged in any business, one hundred dollars or more was received back again." It will give us sincere pleasure by means of advertizements to put thousands into the pockets of our friends in this Department.

The late appearance of the Planter in January, we are not surprised to see, has given dissatisfaction. Our subscribers are not more dissatisfied with it than we were. Our printers announced that they had copy enough, and after Christmas came to us for twenty pages more. As they are business men, we do not mean to blame them for an error in calculating that will sometimes happen in all printing offices.

We hope the same error will not again occur. It will be remembered that the time limited for the appearance of the present number was the middle of February, and after that regularly on the first of each month.

MESSRS. MATHEWS & SAUNDERS' CATTLE.

We publish in this number two, and in the March number we shall publish two more, wood cuts of the very superior short horn cattle of these two public spirited gentlemen. These cattle will be remembered by many who saw

them at the Fair of 1855, where they were undoubtedly, as also at the Petersburg Fair, the best stock of their breed ever exhibited in lower Virginia. As is almost always the case with the best stock, the wood cuts do not do them justice.

NEW BOOKS.

WIDDIFIELD'S NEW COOK BOOK; OR PRACTICAL RECEIPTS FOR THE HOUSEWIFE.

We received, some time since, a copy of the above named book from Mr. A. Morris, and have deferred a notice of it until now that we might speak of it experimentally. Many of the receipts have been tried in our family, and have been pronounced *good, excellent, superb, capital!*

Mrs. W. has been for a long time celebrated as an adept in the culinary art, and the *preparation* of this work proves her to be fully up to her business. One great merit that it possesses over any similar one of modern times is, that it is more economical; an important consideration in these times that try men's purses, and when, to use the language of a wise man, "never, perhaps, were children dearer to their parents than now when the price of provisions is so extravagantly high." It embraces full directions for pickling, preserving, &c., and "much attention has been paid to that portion which appertains particularly to the preparation of dishes for the sick and convalescent."

We are indebted to J. W. Randolph for a copy of **BLACK ACRE vs. WHITE ACRE**, a novel, by a gentleman of Va. The subject is slavery and the slavery agitation. We have had no time to look into the work, having recently received it. But we have no doubt, from the name of the author, who is one of the cleverest of our public men, it is an interesting work.—Its sentiments are certainly of the right stripe for this country.

We have also received from the same, **SCRIPTURAL AND STATISTICAL VIEWS OF SLAVERY**, by Thornton Stringfellow, D. D. We have merely glanced at his work, the first part of which we read attentively years ago with great pleasure and instruction. We can commend it most heartily to the public from our previous knowledge, and from the reputation of its distin-

guished author. Every man should read and study this pamphlet.

AGENTS FOR THE SO. PLANTER.

F. N. WATKINS, Esq., is our authorized agent for the county of Prince Edward, and the region tributary to Farmville.

W. M. MAGHEE, Esq., of Petersburg, is our General Agent, and is authorized to receive subscriptions and collect money due us.

ACKNOWLEDGEMENTS TO THE PRESS.

Our thanks are due to numerous Editors who have kindly noticed the enlargement of the Planter, and lent their encouragement to our humble efforts in the cause of Agriculture. We cordially thank them one and all.

A DUN IN THE RUNIC MEASURE.

We find the following floating about in the papers, and it fits our case so well that we cannot help copying for the benefit of a certain large and respectable class of our customers. We have taken the liberty to add a fifth and concluding stanza to which we ask *particular attention*. It may not be rhyme as Sylvester said to Ben Jonson, "but it is the truth," as Ben Jonson said to Sylvester.

"Should you ask me why this dunning,
Why these sad complaints and murmurs,
Murmurs loud about delinquents
Who have read the paper weekly,
Read what they have never paid for,
Read with pleasure and with profit,
Read of news both home and foreign,
Read the essays and the poems,
Full of wisdom and instruction;
Should you ask us why this dunning,
We should answer, we should tell you,

"From the printer, from the mailer,
From the prompt old paper maker,
From the landlord, from the carrier,
From the man who taxes letters
With a *stamp* from Uncle Samuel—
Uncle *Sam* the rowdies call him—
From them all there comes a message,
Message kind, but firmly spoken,
'Please to pay us what you owe us.'

"Sad it is to hear such message
When our funds are all exhausted,
When the last bank note has left us,
When the gold coin all has vanished,
Gone to pay the paper maker,
Gone to pay the toiling printer,
Gone to pay the landlord tribute,

Gone to pay the active carrier,
Gone to pay the faithful master,
Gone to pay old Uncle Samuel—
Uncle *Sam* the rowdies call him—
Gone to pay the Western paper
Three-and-twenty hundred dollars!
Sad it is to turn to our ledger,
Turn the leaves of this old ledger,
Turn and see what sums are due us,
Due for volumes long since ended,
Due for years of pleasant reading,
Due for years of toilsome labor,
Due despite our patient waiting,
Due despite our constant dunning,
Due in sums from two to twenty.

"Would you lift a burden from us?
Would you drive a specter from you?
Would you taste a pleasant slumber?
Would you have a quiet conscience?
Would you read a paper *paid for*?
Send us money, send us money,
Send us money, send us money,
SEND THE MONEY THAT YOU OWE US!"

Do not put it off a minute,
If you do you may forget it,
Ah! you surely *will* forget it
As so many have before you;
And though it may be small to you,
Be esteemed a little matter,
Yet to us it is no trifle,
Yet to us it is important
That we have what each man owes us.
But we would not have you stop at
The mere payment of your just debt.
No indeed! You should go further:
You should send us a subscriber:
One at least; but we'll not grumble
Should you send a list of twenty
New and good names for the Planter.
For we want, and feel it deeply,
Feel it in our inmost nature,
Want, until it is a craving,
Every farmer in Virginia
To become our fixed subscriber;
To become our punctual debtor
For a copy of the Planter.

THE LIME AND SALT MIXTURE.

Several years ago, as the following letter asserts, we requested our friend, Major Gilliam, professor of chemistry, &c., in the Virginia Military Institute,—well known to most of our readers by the contributions with which he has favoured the Planter,—to test the accuracy of the lime and salt mixture so perseveringly recommended by Prof. Mapes. As it will be seen below he has done so very fully, and the result is briefly but satisfactorily stated below. Hood told a story of a woman who asked the physician attending her sick husband:

"Doctor, what will be the consequence if I give him brandy and salt?"

"Why, madam, if you give him enough of it, the consequence will be that he will be in a *drunken pickle*."

And so if one shall dose his land with lime and salt, the consequence will be that his land will be limed and salted—nothing more.

[Ed. So. Pl.

Mr. Editor—Some years ago, "Prof. Mapes," the "Chilian guano" discoverer, gave a receipt for a mixture of lime and salt, and in almost every issue of his paper, urged the use of it, asserting that by standing a certain time, mutual decomposition of the two substances would take place, with the formation of *soda* and chloride of *calcium*; that the caustic *soda*, would draw carbonic acid from the air, and become *carbonate of soda*; and that the whole would constitute a very valuable mixture for manures, composts, &c.

At your suggestion, I undertook to prepare some of the mixture in exact accordance with the directions, and, after allowing it to stand the required time, to test it for the purpose of ascertaining whether what the "Prof." asserted was really true. The mixture was made, plied with water, stirred repeatedly, &c., for weeks, just as the directions called for; but something interfering the mixture was set to one side, and there remained for two or three years.

A few months since I tested it, and found that after all my trouble it was still *lime* and *salt*. Thinking, however, that possibly I had not done the mixture full justice, I had another portion prepared. Even this, after standing for months, proved to be lime and salt, without a trace of *soda*.

I communicate the result of this experiment at this late day, for those who still use this mixture with the belief that the assumed changes really do take place. I have nothing to say against the use of either lime or salt, or both, as they are both good in their way; but I do say that to make this mixture, and compost it with any sort of manure containing nitrogen, will result in injury rather than benefit, because the lime not undergoing decomposition, is *caustic*, and will expel ammonia as fast as it is formed. If, however, it is composted with leaves, straw, mould or swamp mud, it must produce the same efficacious results that are known to follow the use of lime in composts of this character generally.

At first sight the mutual decomposition of the lime and salt, would seem to be a sort of matter of course operation; but there is a well established law of chemistry, which makes it impossible. According to that law, no two bodies, one or both of which are more insoluble than those which would result from their mutual decomposition, will decompose each other. Lime

is almost insoluble, and its carbonate is quite so; whereas the chloride of calcium and soda, or its carbonate, the bodies which would result from the mutual decomposition of lime and salt, are very soluble; and hence their formation is, according to the above law, out of the question.

If the lime and salt mixture really underwent decomposition with the formation of carbonate of soda, by the absorption of carbonic acid from the air, the discoverer might justly pride himself for having made a very valuable discovery in applied science; and would find the manufacture of carbonate of soda, even more profitable than manufacturing "improved superphosphate of lime" or "Chilian Guano." In former times the only source of the carbonate of soda of commerce was in the ashes of sea weeds, the article was high in price, and the supply limited. The discovery was made, however, that by strongly heating sulphate of soda, mixed with chalk or powdered limestone, and fine coal, in a furnace of peculiar construction, the sulphate would be decomposed and carbonate take its place. This discovery, coupled with the well known fact that, by heating a mixture of sulphuric acid and common salt, sulphate of soda would be formed, led to a complete revolution in the manufacture of soda; and nearly all of the carbonate of soda of commerce is now gotten by the action of sulphuric acid on salt, the subsequent heating of the sulphate of soda so formed with chalk and fine coal, and the after solution and crystalization of the carbonate. But this process is complicated, involves the use of fuel, furnaces, &c., together with the loss of large amounts of sulphuric and muriatic acids, and would inevitably be immediately abandoned if the mere mixture of salt and lime in certain proportions, by being kept moist, exposed to air, and frequently stirred for a few weeks or even months, was going to effect the same end.

WILLIAM GILLIAM.

V. M. Inst., Jan. 1857.

TO CURE CATTLE OF HOVEN.

Make a rope of straw or hay about the size of your wrist and pass it through the animal's mouth, and tie it tightly behind the horns—it will cure certain.

The friend who sent us the above knows all about cattle.—[Ed. So. Pl.

IRISH POTATOES.—HOT BEDS.—EARLY PEAS.

The following gardening directions are taken from the Cotton Planter and Soil of the South, whose Horticultural Editor, Mr. Peabody, always has something good in his department.

The directions for covering Irish Potatoes we know by experience to be good. But it is an

expensive plan, requiring a great deal of labor to collect the leaves or a great waste of manure to apply the straw. When, however, a part of the profit is expected from improvement of the land the cost of the covering is no objection.

For a fall crop of Irish Potatoes we shall hereafter give a different, and, we think, a better plan.

Plant Irish potatoes under straw; manure the ground well, and plow it deeply; open furrows two feet apart, and drop the half of a potatoe two feet apart in the furrow, cover it two or three inches with earth, and then cover the whole bed two feet deep with leaves or straw. The rains will beat down the leaves and straw, and no matter how dry the season, the ground will never become entirely dry. We made in the dry season last year, by planting potatoes in this way, the finest and largest potatoes we ever saw any where. Those who are willing to a trifling expense, may start the early cabbage, lettuce and cauliflower, in a hot bed. A frost proof hot bed may be made after the following manner: Excavate a piece of ground as large as the frame is to be, twelve inches deep, in this put six inches of good cotton seed, fill up with garden soil, and put on the frame.—The frame may be made of common rough plank, facing and sloping south, with a common window sash to cover it. In this, plant the seeds; the heat of the cotton seed will force the plants into a quick growth. In mild weather, take off the sash that the plants may have air. Where cotton seed cannot be had, stable manure will answer. Have convenient some old matting, loose straw or hay, to place over the sash, in very cold weather. A crop of very early English peas may be obtained by planting in the following manner: Open a trench as long as the row is to be, eight or ten inches deep; in the bottom of the trench dig in some well rotted manure; the trench should be about twelve inches wide. In the bottom of this trench plant a double row of English peas, (the early varieties.) It will take a very severe frost to freeze down to the bottom of the trench; but should the weather prove very cold, some planks placed over the trench will protect the plants. By the time the peas are up to the top of the trench, they will be safe from frost.—The sides of the trench may be dug down, the peas stuck with brush, and very early green peas may be had for the table. Snap beans and okra may be started in this way. The okra will not require as deep a trench, as it is slower growth. It may be well to caution our readers that there are three requisites for a good vegetable garden—good soil, good culture and good seed. Never purchase garden seeds from any but reliable dealers. Cheap garden seeds are generally the *dearest*.

WYANDOT CORN.

We gave last month Mr. Moody of Isle of Wight's account of his success with this new variety of corn. We give below the other side of the picture from the Report of Mr. Nicol, lately superintendent of the model farm of the Union Agricultural Society, in his final report to the executive committee. We find it in the Southern Farmer of Dec. 13, which we were so unfortunate as not to get until the 2nd of January.

One acre was planted with Wyandot corn on the 21st of April, the ground previously heavily manured and thoroughly prepared. The corn, according to directions, was planted five feet apart each way, one grain to a hill. About two-thirds of the grain planted vegetated, and for a week or two grew slowly and looked yellow, until about the end of May, when it grew off rapidly, each grain or hill throwing up from three to ten stalks, averaging in height from seven to ten feet, and when in full growth looking luxuriant and beautiful. On October 3d, the whole was cut down and shocked up, the stalks still green and leaves nearly all dry; and on the 25th Nov., had all shucked and measured. The result was 12½ bushels of only comparatively sound corn; 8 bushels of cobs with a few grains on them, and worthless nubbins. A large proportion of the second growth of stalks failed to produce any grain. The only really sound grain being obtained from the first or original stalk. The report of this experiment must go for what it is worth. I will only further remark that whatever may be the merits of this variety of Maize in rich, or moist ground, I very much doubt of its suitability for highland culture.

WYANDOT OR HICKS CORN.

WELDON, N. C., Jan. 23, 1857.

Mr. Editor—In your January number of the "Southern Planter," I find a letter from Mr. A. G. Moody, of Isle of Wight Co., Va., upon the subject of Prolific Corn. Mr. Moody states that he procured the seed from New York, whence they were procured from Illinois, and he calls it the "Wyandot Prolific." In reading it I was struck with two facts. First, that our farmers have to send North for their seed corn (and it is so with nearly all our garden seeds); and second, the close similarity between this corn and a Prolific now much used in this region after thorough trial. The former is a very deplorable "fact," and farmers should exert every means in their power to "rub it out." The latter is a gratifying "fact," as it opens an avenue of escape from the disagreeable and disgraceful vassalage to the North, as the seed to which Mr. Moody alludes can no doubt be procured in abundance here.

This corn (which I have no doubt is the identical Wyandot corn in all except name) is called by some the "Hicks Corn," by others "Extra Prolific," and from fair trial it has been ascertained to stand a drought better than any other, and in *any* season to produce about *one third more* than any other species of corn. In other words, *three* crops of this corn are equal to *four* crops of other kinds. On *good* ground the stalks will bear from four to seven full ears. On inferior land (which would not produce other corn at all) they bear from two to four ears, and all full. It is precisely the same kind of corn described by Mr. Moody, and makes beautiful white meal, and I have noticed that the corn, when shelled, weighs *over fifty-six pounds* to the bushel.

These facts can be well authenticated, and the corn can be procured in any quantity on application to numbers of gentlemen in this community. The price, I suppose, (not knowing) would be from one dollar to one and a half per bushel. Very respectfully,

J. F. S.

N. B.—Messrs. B. W. Bass, W. T. Sledge, or G. T. Simmons, have been cultivating this corn, and could no doubt supply orders for it.

PLAN OF A TOBACCO HOUSE.

A short time ago we applied to a friend for a plan of a tobacco house which might at pleasure be converted into a hay house. Though the information was sought entirely for our private use, we find the suggestions so good, and the directions so complete, that we think it well worth publishing; especially for those unfortunate people, who, like ourselves, have a *hollow* where the bump of *mechanic-iveness* ought to be.—[Ed. So. Planter.

Gale Hill, Albemarle, Jan. 10th, 1857.

* * * * *

* * You say you want a house with the posts let into the ground, and framed for vertical weatherboarding. Now, unless you have locust or cedar posts, I think it better policy and cheaper in the end, (if not as cheap in the first cost,) to frame the bottom of the posts into a good twelve or ten inch square sill, and put the sill either upon blocks, (as a temporary support,) or upon suitable brick or stone underpinning. If, in accordance with the above suggestion, you abandon the idea of putting the posts in the ground, so well; and you have nothing to do but frame the house with strong timbers, (corner braces,) well put together in the usual way, except that I would advise that the corner braces should be longer than usual, and thus brace higher up on the corner posts, the advantage of which needs no explanation; if, however, you put the posts in the ground, (and they should be put in from three to four

feet deep, and *well rammed and plumbed*,) they should be well braced not only with diagonal braces from post to post at the ground, but also with swinging braces (that is, from post to plate,) at the corners,—so much as regards bracing the corners under either plan. Your upright posts should be at least ten inches square, (rough-hewed will answer,) and ten feet apart, though they might be as much as twelve feet apart, if the size of the house required it, and the plates four by eight inches, and well morticed and pinned on the top of the posts; then your joists or top-tier poles should be well pinned on the plate at both ends, or at least every other joist should be thus strongly pinned at both ends to the plate, and the ends of the joists should project eight inches (or more) beyond the outside of the plate, which, with the projection of the shingles, will give at least one foot eave,—this will do; though more is better in a high house. The scantling (or purlins as they are commonly called) should be three by four inches and of length to suit the distance from centre to centre of the upright posts, (except the corner posts, where they should extend out flush with the corner,) and they should be let into said posts, at intervals of three feet, (two feet nine inches would answer,) one inch and a half deep, having the insertion sawed out of the posts with square shoulders to support well the purlins, and the purlins to be well pinned (with inch pins) into each upright post, not only at the ends of the purlins where they meet on a post, but wherever they cross the line of a post—this forms a strong horizontal bracing to the house; and on these purlins, which are three inches thick, the ends of the tier-poles are laid, after being slightly flattened at the end to keep them from turning over, (and this three inches at each end will be hold enough for the tier-poles if they are pretty stiff, which old-field pine poles of suitable size skinned and seasoned will be, and they make the best;) and on the outside of these purlins, together with the plate and sill, the vertical weatherboarding—with plank, or three quarter, square edge with the edges in contact, not lapped—is well nailed; this weatherboarding braces the house again, and supports the purlins, which enables them to bear the weight of the tier-poles loaded with green tobacco.

Next, as to the height and size of the house. I would have six vertical tiers between the ground and the joists inclusive that would do to fire tobacco on; this would require the lower tier eight feet from the ground, the next tier eleven feet, the next fourteen feet, the next seventeen, and twenty and twenty-three, at three feet between the tiers, which is the most approved space, and it is undoubtedly best for large tobacco; but thirty-three inches makes more space than is often found in log tobacco houses after a few years settleage, and is space enough for ordinary tobacco, (*average* I mean). Upon

these estimates your house, from the ground to the top of the joists, will be either twenty-three or twenty-two feet; and the roof of a tobacco house should be a little sharper than a square, on account of the weight it has to support, and should be strongly framed and braced, (wind-braced also,) and should have a bonnet (or two—on opposite sides) in the roof about a foot from the top, made by nailing at the right place wedges on the rafters with the sharp end of said wedges uppermost, and then sheet and shingle on the wedges. The house should not be larger than twenty-two feet by forty feet I think, which I think the best size, (or twenty by forty feet will do very well,) and if you want more room, add a shed to prize and strip in, or build a separate house in another place. It is better to build a tobacco house at the foot of a hill, and underpin with stone or brick up to the first tier; this offers several important advantages which are obvious. There is nothing inconsistent with the hay house in the plan above described; a few windows on either side will accommodate the ingress and egress of the hay and afford ventilation, and a large door on either side will make it complete and convenient. It is an improvement on such houses to have one of the vertical strips of weatherboarding hung on hinges at every tier, or every other tier, for additional ventilation; and this is equally good for the hay.

W. W. M.

TOBACCO PLANT BEDS—ANOTHER PLAN.

NEW'S FERRY DEPOT,
Jan. 26, 1857. }

Mr. Ruffin—Dear Sir: I am very glad you have enlarged the "Planter." * * * *

In your last number, (Jan'y), I notice two articles upon plant raising. It is time the old methods of raising plants should be discarded; and while I have my pen in hand will give you a plan pursued by myself, and which I can recommend to the planters of Virginia. It is simply this: select a place near a never-failing branch or spring, burn well any time before 15th Feb'y, pulverize finely the soil with grubbing and hilling hoes, sow two slightly heaped tablespoonfulls of seed to 100 square yards—then spread one large four horse wagon load of fresh stable manure upon a bed of 1000 square yards, and tread with the foot, after which put brush on the bed only tolerably closely. On beds burnt after 1st February rake off the ashes; and leave them on beds burnt before that time. Use no guano at time of burning. Buy a large garden or fire engine, with hose, (such as is used by firemen) 50 feet long.

The engine and hose will cost \$65 or \$70.—Whenever there is danger of frost injuring your plants throw water on them very early in the morning, and should the bed become dry

water it well, holding the thumb over the end of the hose so as to make the water fall like rain, and turn the end of the hose upwards. If your plants turn yellow from bad burning, or sobbing during rainy seasons, sow about 4 lbs. of guano to 100 square yards on the plants after the leaves are as large as a dollar; after which, water them. In four days they will be perfectly green and healthy; repeat the guano if necessary. Three or four negroes can water 1000 square yards in two hours in very dry weather. Plants will grow much faster from watering them, than from rain, as the weather is much warmer. By pursuing this plan, plants can be had as early as you wish, and as many as you want. Half the quantity of plant land usually burnt will answer. From two thousand square yards, last year, I planted 240,000 hills, and re-planted about 60,000, and gave to one of my brothers about 275,000 plants, all of good size, and in good time. If water had been thrown on earlier, a much larger quantity could have been raised. I have no doubt but that, with the aid of this engine, plants may be raised upon any kind of land in the greatest abundance. The engine can be had from Messrs. Cowing & Co., Seneca Falls, New York. This mode of raising plants is worth all I have ever seen published. A man may calculate with certainty that he will have plants; and tobacco flies and grasshoppers never trouble him. He is independent of rain.

Yours, &c.,

STERLING E. EDMUNDS.

A NEW PRESCRIPTION FOR HAPPINESS.

We commend the following extract to our friends. We have no doubt those in arrears will find it efficacious, and it may be that an *advance* will help those who have paid up like men and yet feel badly. We certainly think it worth a trial.

I awoke this new year's morning with a depression of spirits altogether unsuited to the season—what could be the matter? I couldn't enjoy my breakfast or the prattle of my children—in the language of the poet, (I always become poetical when any thing weighs on my mind, or my stomach,) "man delighted me not, nor woman neither," when all at once, like an electric flash, it occurred to me that I might be in debt to the Planter! Thanks I to myself, if that's the cause of my trouble, I will try the virtue a small remittance, without delay. So here, I lay you down \$5—and strange as all those who are in arrears may think of it, I feel easier already. Hoping that all who owe you for your valuable paper, may find ready relief in the same way,

I remain, as ever, very truly and affectionately, your friend.

THE SNOW STORM OF JANUARY 17TH
AND 18TH. INFORMATION WANTED
IN REGARD TO IT.

We hope that all who keep Meteorological Journals will send extracts from them as requested in the subjoined note of Lieutenant Maury :

OBSERVATORY, WASHINGTON, }
January 23rd, 1857. }

Mr. Editor:—The great snow storm of 1857, commenced here about midnight of the 17th; where did it begin, which way, and how fast did it travel, and where did it end?

These, with other circumstances connected with it, are interesting points of inquiry, and if those of your readers who keep meteorological journals will send me an extract from them for a week, commencing January 14th, and if those who do not keep journals will report when the storm began and ended with them, the amount of snow that fell, and the way the wind blew, I shall have materials enough to go into the investigation.

Will you do me the favor to say that I will be much obliged to any of your readers who will have the kindness to give me such information through the Post-Office.

Respectfully, &c.,

M. F. MAURY.

F. G. RUFFIN, Esq.,
Ed. Southern Planter,
Richmond, Va.

From the Boston Cultivator.

GRASS SEEDS.

Messrs. Editors—Believing, that we hold far too large a portion of our land under the plow, and satisfied that at least one-half our cultivated lands should be devoted to the grass crop, either as mowing or pasture ground, with the view, however, of periodically taking portions of these into cultivation and laying down as much in extent from the cultivated lands in their stead—a system that has been very properly denominated “convertible husbandry”—I would impress upon my friends who are placed in the same circumstances with myself, a far more careful consideration of the business than I am free to confess, I myself have ever before bestowed upon it; satisfied that lands thus devoted would be found to recover their fruitfulness while under a periodical lay, far more speedily than they would do by the most judicious treatment they could receive while under a course of cropping, recommending however, a regular dressing of some sort, administered yearly, during that season of repose and *rest*, in the best acceptation of the term; ample proof of which would be furnished, when it should again be returned to tillage.

In my reading, I have met with the following judicious, interesting and instructive remarks,

which I would be pleased to see reproduced in some future column of the Cultivator, as they come to the very point at which I am aiming, namely, to show the value and importance of the first step in advance of the desirable object in view, namely, a proper attention to the quantity and quality of the seeds of the different grasses usually sown, and by which much of the after-success, or the want of it, may be supposed to depend. Here follows the author's article, and accompanying it my warmest wishes for the success of your labors. W. B. C.

“A very knowing man gave it as his opinion, ‘that whoever could make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together.’ Now although the mass of noisy politicians, who wish to fatten, not by making grass or corn grow, but by lugging fiercely at the public teat, may incline to controvert this opinion, yet it is presumed that the plain, honest, industrious farmers of our country, who gain a livelihood by close attention to agricultural pursuits will incline to think more favorably of it. Being myself a believer in the opinion, has induced me take up my pen, with a view of pointing out to my friends and neighbors, what may be done the coming spring towards accomplishing so desirable an object.

It is now universally admitted that neither grass nor grain or indeed any plant whatever can be produced without seed; and that whenever we wish to produce any particular plant we must sow or plant the proper seed to produce it. In sowing the seeds of the artificial grasses, it should be borne in mind, that you will not have more spears or grass plants than the number of seeds sown, and not even that number, for more or less of them, from various causes will fail to vegetate or be destroyed. If it is desired to have the plants numerous, the seeds must be thickly dispersed; it is true, many seed cost more than a few, but the object being to obtain a full crop of grass, this can only be obtained by being liberal in the application of seed; let those who wish only a very moderate return of grass, sow the seed *thin*, *very thin*, and they will accomplish the object; they may have the plants six inches or a foot distant from each other if they are careful to put the seeds far enough apart.

Being desirous of ascertaining the number of seeds of the kinds usually sown which would fill a bushel measure, I recently caused to be accurately weighed the one-sixteenth part of an ounce avoirdupois of the kinds designated below; the seeds in each parcel were then carefully counted, from which it was ascertained the number of them contained in a pound, and also the number contained in a bushel, the weight of which was known. The seeds were all perfectly clean, and the best of their kind.

Timothy seed rated at 40 lbs. per bushel the number of seeds contained in a bushel is	-	60,600,320
Red clover seed, (American,) 60 lbs per bushel,	-	24,084,480
Dutch red clover seed, imported, 60 lbs. per bushel,	-	16,819,209
Dutch white clover seed, imported, 60 lbs. per bushel,	-	43,920,600
Orchard grass seed, 12 lbs. per bushel,	-	5,818,368

The imported red Dutch clover seed was considerably larger than the American, and it will be perceived that the latter contains about 50 per cent. more seeds to the bushel than the former, and consequently, it would take a bushel and a half of the Dutch seed to furnish as many plants as one bushel of the American.

It has been a very general error amongst our farmers to sow grass seeds too sparingly thereby leaving much of the ground unoccupied, or filled with weeds, which will inevitably be the case where the soil is fertile, and grass seed has been applied with a parsimonious hand. A very small share of common sense observation, and a little arithmetical calculation will correct this pernicious and impoverishing error. An acre of land contains 4840 square yards, or 43,560 square feet, or if brought to square inches; 6,272,640 spaces, each of one inch square, is equal to one acre. If clover seed is sown evenly at the rate of $7\frac{1}{2}$ pounds, or the eighth of a bushel per acre, it would produce about three million of plants, provided they generally vegetated, which would allow each plant about two square inches of space for its accommodation. But it must be recollected that there is always a considerable loss of seed occasioned by its being imperfectly ripened, from its having been heated, or by its being buried in situations unfavorable to its growth, or other causes, so that ample allowance should always be made to guard against contingencies of every kind. From the data furnished above, it will be easy to make a calculation in regard to any of the seeds enumerated, so as to operate as a guide to those who don't desire to give their grass plants more elbow room than may be necessary to promote their proper growth and expansion and the farmers true and most permanent interest."

SALE OF NEGROES.

The editor of Warrenton Whig, who was recently on a visit to Richmond, was informed by Messrs. Dickinson, Hill & Co., auctioneers of this city, that the gross amount of their sales of negroes last year reached the enormous sum of *two millions!* The entire sales of other houses of a similar kind in Richmond, would make the amount go over four millions—and still

the business is increasing. We ourselves (says the Whig,) witnessed the sale of 35 servants at an average value of \$700.—Negro girls not ten years of age sold for \$800. If this work does not stop in a short time, Virginia will be stripped of nearly all her negro population—all owing to the agitation of the infernal negro question by the fanatics of both sections. One of the negroes mentioned above, a rough carpenter, nearly forty years old, brought \$1,615.

In Williamsburg, last week, Ro. Saunders, Esq., executor of the estate of the late Rev. Scervant Jones, exposed for sale some twenty slaves, all of whom commanded a most excellent price. A negro woman named "Dolly," between fifty and sixty years of age, sold for \$725 cash.—All the rest were sold at proportionate prices, so far as we can ascertain.

In Lynchburg, last week, the following sales were effected:

Man 23 years old,	\$1,316
" 46 " "	1,360
Woman 20 years old and child,	1,140
Man 21 " "	1,110
Woman 21 " " and 2 children,	1,380
Woman 20 " " " 1 child,	1,260
" 19 " " " 1 "	2,040
Man 38 " "	1,300
Girl 17 " "	1,190
Boy 19 " "	1,025

In all, thirty slaves were sold, and the average of old and young, including several children in arms, reached the very high figure of \$708.

The Charlottesville Advocate says:

"There was a very large number of negroes sold publicly on last Monday, our last January Court day, probably as many as a hundred, belonging to different owners, changed masters that day. The prices which they brought were very high, ranging from \$1000 to \$1,300 for men, and 800 or 900 for women."

A sale of ten negroes, ranging in age from 10 to 70 years, was made in Liberty, Bedford Co., on New Year's day, for the aggregate sum of \$7,637. The highest price obtained was \$1,255, the lowest \$140, average \$763.70. This is doing pretty well considering the almost superannuated condition of several of the negroes.—*Tobacco Plant.*

ADDRESS.

GENTLEMEN OF THE SOCIETY:

I was invited, some weeks ago, by the President, to speak before you to-night about a "*Professorship of Agriculture at the University of Virginia*." The subject is a very important one, which at various times has engaged the attention of some of the truest and most enlightened friends of agriculture in the State, and is still full of interest to us and our children. It has been brought to our notice on two former occasions; and at this meeting both the President and the Executive Committee, in their annual reports to the Farmers' Assembly, have thought it worthy of their especial commendation on one plan or another. It well deserves our further consideration among the various schemes for the advancement of agriculture which challenge our thoughts, our care, our means. Heretofore when wise and good men have advocated agricultural education as the surest step in agricultural progress, the want of money has been the obstacle in their way. Not so now; we have the money in ample store. If we have the will, we can accomplish a great and good work, which our fathers attempted in vain.

I proceed without further preface and in a plain, conversational way, to state some of the reasons why, for one, as a farmer of Virginia, I desire to see such a professorship established at the University of the State; and, as a member of this society, desire to see it done now, and with our money.

To educate a man for any business or profession, is simply to prepare him by proper training to apply his bodily or mental powers to his contemplated work. Thus carpenters, shoemakers, sailors, lawyers, doctors, divines, and other tradesmen and professional men are prepared for their several parts in the great drama of life. The first and most natural inquiries are, does this professional education or training do any good? Does it pay in other cases? If it does, will it pay in the case of farmers? Will similar advantages accrue to our profession from agricultural education?

The man who should seriously propose to abandon proper training before putting a youth to any business, trade, or profession of life, except farming, would be most certainly and unceremoniously "written

down an ass." All human experience since human knowledge began, has established the advantages of such educational training. No man, in his senses, would select another man to attend to any business, because he knew nothing about it, and had taken no pains to qualify himself for it. The reason of the thing stands on the same side with experience, and loudly condemns professional ignorance, whether we consider the interest of the practitioner himself, or of society at large. Men succeed in their undertakings, and the welfare of society is promoted by their success, in proportion to their previous good training for their work, and the zeal with which they have perfected such training by subsequent labour and practice. This is self-evident and needs neither demonstration nor argument to prove it. *Ceteris paribus*, the carpenter builds a better house, the shoemaker makes a better shoe, the sailor better steers his ship, the lawyer better pleads his client's cause, and the physician more successfully wars upon the diseases our "flesh is heir to," who has most carefully and most thoroughly prepared himself for his business: now can this be true of every other branch of business, and false of farming only? Is the farmer so dull that education cannot enlighten him? or is his business so simple that the knowledge of its mysteries may be said to come by nature? Surely no farmers will admit neither of these ignominious taunts. Unlettered we may be—and if so the fault is our own. But it will be time enough to defend from the charge of *dullness* the mighty host which bears upon its Atlantean shoulders the firmament of civilization, with all its bright hopes, when such a charge shall have been made in seriousness by any of those who hang upon our skirts, and fatten on our offal. If made, the slander would be forever drowned in the swelling anthems of peace and plenty which herald the march of agricultural improvement whenever it comes. By us, as far as it may be said of any thing human, all other men "live and move and have their being." The cornucopia of old mother earth is in our hands, and all who hunger, or thirst, or shiver in the cold, must ask the solace of their ills from us.

Whether farming, like politics and shoe blacking, comes by nature or not, may merit a moment's investigation. If it do, then the probability is, that ag-

riculture will improve as little as they have done, or are likely to do: but farming has improved. Any one who will look at the teeming millions now supported, in great part, by the British Isles, and compare this vast population with that of former times; or who will look at the present highly improved condition of many portions of that country, and remember the sterility which originally brooded over them, must admit, I think, that the farmer of England knows more about his business than comes by nature—that *he* has learned something about farming—nay, that he is educated. Who that remembers the gullies, the galls, the barrenness, which disfigured many parts of our own State half a century ago, and drove our most enterprising citizens to the fertile regions of the west and south, can deny that farming has improved in Virginia too? that our farmers have not been taught by nature alone? Whether the politician and his condiscipulary compeer in nature's school, have improved or not, is a problem which I leave for them to discuss—content to have shown that the farmer is not like them—for which let heaven be praised.

Not only does farming not "come by nature," but man *by nature* is averse to farming. The true noblemen, in the school of nature, are the hunter and the fisherman. A natural love of personal independence that longing to cast off the restraint of other men's presence, makes the savage find delight in the pursuit of the game of the forest and the fish of the stream; and renders it difficult to wean him from his wild state, and teach him agriculture. Farming is the child of progress—begot of labor and born of knowledge, after man has shed the *exuvie* of savage life. When the forest is scant of game and the river of fish, cometh necessity, that stern and unrelenting mistress, to whose inexorable laws man owes all his excellence, and teaches him to till the earth—makes him a farmer—and keeps him one—in short, educates him for his high destiny of civilization. But unfortunately man, when put to school, is like all schoolboys; he sighs for the pleasures of the chase and the angling-rod; and learns no more of the lessons necessity sets him, than he is compelled to learn—he half knows this and half does that, and says "it will pass, let it go." He fondly hopes since the days of the ferule and the cat-

o-nine are gone, that his teacher has no rod in pickle for his delinquencies. But soon growing wants, increasing numbers, and decreasing fertility of soil awake him from his dream, and thunder in his ears his irrevocable doom—learn or suffer, till the soil or starve. Admit that we know enough for present purposes—does any man suppose that our knowledge of farming will suffice for that coming day, which casts its shadows before it, when twice as many backs to clothe, and twice as many mouths to feed will rise up in judgment against us, and condemn our boasted knowledge—as antiquated ignorance? Away with the notion, my friends. Our great mother, the earth, lies before all her children—scarred with a thousand unfilial scars, and bleeding at unnumbered wounds. She has honoured us with the call to nurse her, and lead her back to health. If we would heed the call, we must learn what nature never has taught and never will teach us—we must learn agriculture in all its multifarious and complicated branches, cares and arts.

I say, we must learn agriculture. Will any man say "I know all about it; I need no teaching?" If such there be, then he will say more than any man has ever said before, or any modest man will ever say again. But, will this Mr. Know-all please to explain some of the mysteries of farming which the rest of us do not know. For instance—I find in one of Gen. Washington's letters to Sir John Sinclair, the following account of his experiments with gypsum—he says, "The experiment, to which I allude, was made eight or nine years ago; at the rate of from one to thirty bushels of Plaster of Paris to the acre (among other things, to ascertain the just quantum to be used.) I spread it on grass grounds, and on ploughed land—on the latter, part of it was ploughed in;—part harrowed in;—part scratched in with a light bush;—while another part lay undisturbed on the surface—all with oats in the spring. But it had no more effect in *any* instance—*then* or *since*, than so much of the earth it was spread over would have had, if it had been taken up and spread again." Now the experience of almost every farmer who hears my voice will differ from Gen. Washington. Why is this difference? Moreover, many of us have heard of land becoming "plaster-sick" and "clover-sick," and some of us believe we

have seen it so. Will they who know all about agriculture tell us about this—give us a diagnosis of this terrene disease, and a prescription which will cure it now, and keep it off hereafter? Again there is mystery upon mystery in the whole subject of manures. One man applies them to his grasses, another to his hoe crops—one prefers long, another rotten manures—one favors top-dressing, another says plough in the manure—will friend Know-all tell us the right and the wrong of these ways, and the reasons for the same? What a diversity of opinions has arisen about guano too! and this touches our pocket-nerve. We spend millions of dollars every year in guano. Some say it pays, others say it does not. Will they, who know all about agriculture, and need no teaching, please to enlighten us about this thing, and save us our money, if we are throwing it away. Liebig says a farmer may bring home from market, in his breeches pocket, minerals enough to repair all the mischief done to his soil by growing a load of wheat. Now that would make farming a very safe business, and I would like to know if it be true. Will Mr. Know-all please to tell me. And so of a thousand other things, which I do not know, would like very much to know, and think I would be a better farmer if I did know. The great majority of my brother farmers are like myself, I expect, and could enumerate many subjects on which they would be thankful for information. Agricultural education affords the only sure means of supplying the information the farmer desires. I shall not contend that the establishment of a professorship at the University will roll back the clouds of ignorance and doubt which hang like midnight around so many branches of the art of husbandry, and shed at once meridian light over the whole science of agriculture. Far from it. Such a result must be the work of time and toil. But we do not refuse to enjoy the beams of the noon-day sun, because he first comes to us with the soft rays of rosy morn? We must begin, and when better than now?

Permit me to call your attention to some branches of science of which the knowledge would be useful to the farmer, particularly the young one; and to point out some other sources of advantage even to us veterans in the establishment of a pro-

fessorship of agriculture at the University. And first, of the scientific branch of the subject.

Science, in these latter times, has come forth from the closet of the student, and is "walking to and fro in the earth," dispensing blessings in every department of human enterprise. Is it only when she enters the domain of agriculture that her progress shall be inhospitably staid? The dyer, the hatter, the tanner, the cloth-maker, the gold-digger, the iron-monger, all owe to science unextinguishable debts of gratitude. The world is indebted to her for the steam-engine, the power-loom, the mariner's compass, the telegraphic wires, and numerous other magic-working elements of modern civilization. Why have men grown wiser than they used to be, if it be not because science has wrought for them with Briarian hand, and given them rest and leisure to improve? Time was when it took more *hours* to spin, weave and sew a coat, than it takes minutes *now*. What may not the man of toil learn in the spare moments?

To what does the world owe the wonderful increase of books and knowledge in the last half century, but to this, that men have leisure to read them? and whence the leisure, if not from the time science has saved the labouring man? We eat and wear, not simply as much, but *more* than our forefathers did, while we toil not half as hard to get our food and apparel. Man has time to be happy and wise. If we treasure the length of life by what may be accomplished in a lifetime, our octogenarians are older men than Methuselah. We can sail around the world while Methuselah was getting ready to visit the shanty of his next door neighbour. In vain have the weird sisters learned to clip the thread of human existence ere half its length is spun, when science twists into every coil of it a thousand sparkling gems of thought and action. Who would exchange our three score years and ten, in every moment of which new ideas and new deeds tread on each other's heels, for the dead centuries of Patriarchal life? A new day is dawning in the world. Science has already marked the eastern sky with streaks of glorious light. Will the farmer alone chaunt no matin song, to welcome its approach? Are the dim candles of night to

burn for him alone, while all around is day?

Can science tell us any things about *our soils*? There are many things which I would like to know about them, which my own experience does not enable me to understand, the knowledge of which would certainly make me a happier, if not a more successful farmer. I believe it would do both. If I were to ask the ten oldest and best farmers in this room, what kinds of original growth indicated a fertile soil—would I get a satisfactory answer? Nay, would I not get conflicting answers? Some years ago, I visited the county of Rockingham in company with several of my neighbours, who were old farmers and sensible men. A few miles beyond the Blue Ridge we entered a most magnificent forest of immense walnuts, oaks and hickories, underneath which the ground was covered with a luxuriant growth of rattleweed. We were all in extacies at the appearance of fertility, and the oldest man of the party exclaimed in his enthusiastic delight—"I should like to make tobacco here. This land would bring pound plants." At the end of our journey we learned from one who knew the land well, that it was sterile and worthless, and for that reason had not been cleared. I have known worn out lands, when first renovated by improved culture, combined with clover and plaster, to produce for several periods of rotation twenty and twenty-five bushels of wheat to the acre, and afterwards to decline, and fall back again to ten and fifteen bushels. But continuing all the while to produce more corn, and seeming, to all appearance, richer than when it produced the largest crop of wheat. Again, we all know lands which will produce a maximum crop with manure, and in a few years show no effects of the manuring; while others will exhibit the effects of it for many years, under just the same subsequent treatment. I have seen contiguous spots of the same field, of which one would seem to be entirely renovated by one application of manure, and put into a condition for indefinite improvement, while another would produce a crop or two, and then ungratefully relapse into its original sterility, although both were cultivated alike in every particular. Some lands ploughed wet lose their productive powers for a long series of years; others are in-

jured but little, and some not at all by such treatment. One man will tell you he has tried lime in all proportions without the least effect—another that it acts like a charm on his land. One buys Mexican guano at a high price, and says it pays; another says that for his land he had as lief have the same amount of dust from the main road, as Mexican guano. I have before alluded to Gen. Washington's failure to improve the land at Mount Vernon, with Plaster of Paris, yet we continue to pay thousands of dollars every year for an article wholly worthless in his estimation. Now is all this blind chance, or is there some key to these mysteries? The geologist teaches us, with very plausible reasoning, that the soil is formed by the disintegration of the original rocks of the earth: the chemist has analyzed these rocks, and found that some of them contain the mineral elements of plants, while others do not. Might it not happen, that if our young farmers came to their work with a proper knowledge of these two sciences only, and observed things wisely in the field, while others watched in the laboratory, the combined appeal of the two might extort from science an answer, which would solve these mysteries? which would find this key for us?

There are many powerful causes affecting vegetable life, which are entirely independent of the soil. Experiments have been tried, which showed that different rays of light affect vegetation very differently. A box was filled with an uniform soil, planted with seeds, and covered with glasses of different colours. The seed came up best and grew fastest under the blue glass; while under the red glass they came up badly, and were of an unhealthy colour. After some days the red and blue glasses were mutually exchanged; when the plants which had come up well and grown vigorously under the blue glass, withered under the red; and those which had been unhealthy under the red glass, became luxuriant under the blue. Will any one say this is all nonsense, no good can come of such things? So men said of the steam-engine *at first*. So even kings and savans said of the heaven-born impulses which swelled the breast of Christopher Columbus. But the steam-engine wasn't nonsense: and Columbus discovered America. We all know that light

plays a very important part in the growth of our crops. But do we know how important? or are we prepared to say that we get all the benefit we can from it? Who can tell? The farmer and the philosopher must work together before we will know.

We know that plants cannot grow without moisture; but do we know the laws which control the absorption of moisture from the atmosphere and the circulation of it in the soil? Would it do us any good if we did know? May be so, may be not. It is worth the trial, I think. During the excessive drought of the last summer, I undertook to prepare a piece of ground in my garden for turnips. It was, to all appearance, as dry as a bone: but I kept working it with plow and hoe, and harrow and spade; and every time I worked it, I thought it grew moister. I planted my turnips, and have the best crop I have seen. Where did the moisture come from? Not from below, there was none there to come. It would be easy to explain how it came from the atmosphere. But not without some science. The commonest observation perceives the interstitial circulation of moisture in the earth. So it did the circulation of blood in the human body many hundreds of years before Harvey found it and explained it, amid the sneers and taunts of the Sangrados, who then thought there was science enough in the world for Doctors. Will the enlightened, and scientific farmer who may first explain how the circulation of the fluids of the earth can be turned to a good account by his brethren of the plow, meet a better fate than Harvey met? I hope that the days of Jack Cade are gone, when the pen and the ink horn were proofs of treason, and doomed their owner to the gallows. But is it probable that any farmer will be enlightened and scientific enough, to explain this and other similar things without being educated?

Whence comes the carbon of plants? Leibig says, "from the atmosphere alone," while Hlubec says—"from the carbonate also." So of ammonia. The former says—"plants get it from the rain water alone," the latter—"from the nitrates." When shall we know which is right? certain knowledge on these, and other similar points might revolutionize the whole practise of modern husbandry.

Now some men are simple enough to argue that because philosophers differ about these matters, therefore philosophy can never be of any use in farming. Lawyers and Doctors have differed from one another. But if men had quit studying law, when the first difference arose about a law point, what sort of lawyers should we now have? or what would the science of medicine be, if it had been abandoned, when practitioners first began to differ about the principles of it? Again, time is necessary to perfect any thing. The ancients knew that amber when nibbed would attract iron filings. But they had no Franklin rods to their houses, as we have, and which we owe to a science which takes its name from the Greek word for amber. So the properties of the magnet were known ten centuries before the mariner's compass disarmed the sea of half its terrors. In still later times. How long was it after the quivering of a frog's leg, near an electrical machine, suggested to the sick philosopher the first idea of galvanism, before Morse invented the magnetic telegraph, which has tamed the lightning of heaven to run on man's errands? And in all these instances of slow progress, there needed but the labor of the philosopher in his laboratory to carry on the investigations; while in the application of science to husbandry he is constantly stopped, or led into error, by the want of that practical knowledge which a farmer alone can have. Philosophy and agriculture must be yoked together, and learn to pull together, before the work can be done. In short, we must wed them to one another before we look for a long line of heirs. I know no better place for this marriage ceremony than the halls of the University of the State.

I might go on almost indefinitely adding instances in which science properly applied would tend to the improvement and advancement of the art of husbandry: But let these few, selected at random, suffice for the present, while I advert to matters not scientific in which improvement would result from agricultural education. Of necessity every boy, who grows up on a farm, learns something of farm-work, unless he be an idiot; but that does not make him a farmer—if it did, our negro boys would be farmers. Even boys raised in town know something of farming

Doubtless there are lads in this city who know that sweet potatoes grow under and water-melons above ground. So every boy learns something of medicine and law, during his boyhood. He knows that when his head or his side aches, he is sick and needs physic; and that if he steal, he is a rogue, and the law will punish him. But such knowledge does not make him a lawyer or a doctor. I believe that boys pick up during their minority as much and as useful knowledge about law and medicine, as they do about farming. But, notwithstanding, the harvest of wild knowledge, if I may so call it, we send our sons to law and medical schools, where they are made to read and study what never was, and never will be law in this State; and to hack and hew the bodies of dead men in a style and fashion which they can never practise on living men. Yet we owe all that is good in law and medicine to this sort of training in professional schools; which, as long as it is mere training, and if we look at it only as training, seems the veriest nonsense in the world. But so evident are the advantages derived from professional education to them who have enjoyed it, nay even to us on whom the lawyers and doctors practise their skill, that if a man should begin a crusade against law schools and medical schools, and propose to abolish them, he would be met with a more deafening cry of "nonsense, nonsense," than now meets the friends of agricultural education. We see the advantages derived by other professions from proper educational training, but continue to educate our farmers, as some folks keep their cattle, on the commons, which may be a cheap way, but not praiseworthy, nor profitable in the end.

The sons of most of our wealthy farmers are educated from home. They are sent to school at fourteen or fifteen, and are never at home again for a long time till of age. In all this time they learn nothing of agriculture away from home, unless it be a little of the wild kind; and but little more at home; for the guns and the dogs, the horses and the girls absorb the moments of vacation. Twenty one comes—the lad is a man—and he goeth forth to farming. Now is this proper preparation for even the simplest, plainest, commonest operations of agriculture? Let us suppose that two years—nay, even that

one year, of this educational period had been spent in attendance on the lectures of a sensible man about farm-work in all its various and complicated branches; and in reading the essays of such writers as Thaër, Stephens, Colman, Skinner, our own Ruffin and a host of other wise farmers—is it not probable that our sons would return from College a little less verdant about farming than they generally come. They would at least learn how to make a compost-heap, and the value of it when made. That would be something: But might they not learn a great deal more? Might they not learn the proper seasons for all kinds of work—the best methods of culture of our various staple crops—the most approved preparation, saving and application of manures—the true principles of grazing a horse, and constructing a plough, gate or cart—something of draining, subsoiling, &c.—something of the value and expense of the different kinds of enclosures, and a thousand other things, all useful and necessary to be learned? Would the knowledge of all these things be any less valuable—nay any less *practical*, because learned from a sensible professor in a lecture-room, where a hundred others were learning them, and talking about them, than if acquired from an indulgent father, or some opinionate overseer? No man in his senses can think it would. As far as my observation goes [and I have had some experience in matters belonging to teaching], fathers are not the best teachers of their children in any thing but honesty. There are exceptions no doubt—Tom Benton is one. But he is an exception to many other rules, and so proves nothing. I think that the most conceited youths in the country are boys educated entirely at home. They get father's notions, and with them father knows every thing. I hardly know a case in which a father, who had a smart son, would not benefit both, by sending the son away from home to attend lectures and read books on agriculture for a year. When the son returned home he would be able to profit more by his father's experience—and maybe, teach something to the old gentleman himself. How often has it happened in Virginia that a father has given a fine estate to a son, and established him as a farmer, whom, if he had been another man's son, he would not have kept as an

overseer on the same farm for his victuals and clothes? Every such instance, and the many disastrous failures which have followed, cries aloud, with trumpet-tongue, for agricultural education. The thousandth part of the money, which the want of proper agricultural training has cost Virginia, would build her ten Universities like the one she has, with professorships of agriculture, and experimental farms attached to each.

I have said, that I would endeavour to show how the agricultural education of the young at college, would benefit even the old farmers. I believe it would do so in various ways. The young farmer, when educated, would bring back from college many new notions—some of them perhaps of little worth. He would talk of them to the old farmers, and try them before their eyes. Some would fail, others would succeed. The veterans of the plow would adopt the good and reject the worthless. Thus from the combined operation of the science of the young and the experience, (which by the way is only another term for science), of the old, results would flow beneficial to both. One would correct the errors of the other. The dogged pertinacity with which men stick to old ideas and practices in farming would gradually break up before a spirit of inquiry and intelligence; and farmers would learn to avail themselves of every new thing which was good, without waiting a quarter of a century to see how it would succeed with others. It is curious how slowly improvements in agriculture were adopted in former times, when we had few or no agricultural journals, and societies—when in fact we had less agricultural education than we now have. I have heard an old farmer deplore his folly in having waited twenty years, to see if all they said about Plaster of Paris was true. When convinced at last, he found his land just twenty years behind his neighbours in improvement, and worth about half as much in market. About twenty-five years ago an intelligent young gentleman from an adjoining county came into Albemarle to get him a wife. He had been trained for the bar, but had recently abandoned it and gone to farming. While courting the young lady, he saw the farming operations of her brother; and among other things that her brother did not plough up and

down hill, as every body in his county did, but horizontally. This method of plowing was no new thing then in many parts of Virginia. Governor Randolph had introduced it, and called attention to it in the public prints many years before. But it was new in the adjoining county, and when the young gentleman returned home and began to plough around the hills—his old neighbours shook their sage heads, and said with a sneer—"Well, the young lawyer will soon quit that new fangled way of driving a plow-team." He did not quit, but on the contrary he lived to see his neighbours adopt the new fangled way of plowing, instead of the up-hill business they had been doing all their lives before. Now this was agricultural science imported into a neighbourhood by a young farmer for the benefit of the old. But the dissemination of knowledge in this way is too slow. Men do not go a-courting often enough; and, when they do, they are too apt to be thinking of something else than agricultural improvement, to leave its importation to such only. Knowledge does not move so slowly in other branches of human affairs. If a new principle of law is established—or a new mode of treating a disease successfully adopted—or a new invention introduced into any manufacturing art, those whose interest it may be to know it, do not wait in ignorance till some courting gentleman accidentally brings them the knowledge of it: and why, except that men in other pursuits of life are trained to read books about their business, and expect to learn and improve by reading them?

At present agricultural knowledge not only is disseminated too slowly; but is accumulated too slowly. We get it too much in fragments, by piece-meal. In one season Mr. A., in an able essay in the Planter, tells us how he has cultivated his corn crop for twenty years, and what his success has been—five years afterwards Mr. B, tells us how he makes corn—and at the end of the next lustrum comes Mr. C. with his mode of culture. Now all these modes may differ—each may have something good which the other has not, or may expose an error which pervades the others. If we could have them all before us at once, so as to compare each with the other, how much more useful would the whole be. Suppose we could

thus have before us at once—in a book if you please, not only A's, B's and C's methods of cultivating corn, but the most approved methods of cultivating all our staple crops in every county of the state, would it not be a rich mine of knowledge for the farmer? Now when we have a Professor of Agriculture at our University, he will discover this mine for us. He will be compelled to do it in order to instruct his class. He must teach his pupils all these various methods of culture in every part of the state. If he does not know them, (as who now does?) he must learn them. Will you ask, 'how can he do it?' Nothing easier. Influenced by that heroic motto: "aut viam inveniam, aut faciam," he will put himself in correspondence with the most intelligent farmers in every district of the state, who will inform him by written communications of the methods of culture known and practised in their neighbourhoods: and he will spend the long summer vacations in travelling over the best farming regions of the state, learning all these things and many others by the seeing of the eye, and the hearing of the ears. Soon he will amass, by these means, a fund of knowledge which will include the systems of cultivating every staple crop in every section of the state. All this mass of knowledge, confused though it may be at first, will then be sifted, analysed, digested and discussed; the different modes of culture classified; the points of agreement and disagreement in them collated; what is good culled out, and what is bad discarded; and the whole arranged for the instruction of his class. He cannot teach his pupils as he ought to teach them, without this labour; which, done for them in the first instance, will be for our improvement too. Our sons will bring home a few gems from this mine at the end of the first year—more the next, and in a few years they will bring us a share in the whole mine, neatly bound up and labelled, in gold letters, "Husbandry in Virginia, embracing the various methods of culture of our staple crops in every district of the state, collected, arranged, and prepared for publication by the Professor of Agriculture in the University of Virginia." Then the knowledge we get about agriculture will no longer be like Jonah's gourd, which withered in a night, but like the majestic oak it will send its

roots as far downwards, as its boughs will grow upwards, and gathering strength to withstand the shocks of a thousand storms, will fill all the air with its fragrance, and enrich the whole land with its fruits.

The short and the long of the matter, gentlemen, seems to me to be just this—our sons have to be taught agriculture; shall it be done after they begin to farm or before—shall their teacher be a professor selected because of his fitness for the work, or an overseer picked up on the court-green—shall they learn the wisdom of their profession only in the expensive school of their own experience, dearly bought by repeated failures, or derive it, in some degree, from what other farmers have tried and known and written—shall they learn by chance, a wayward, costly and often ruinous teacher—or by the sure and certain method of professional education which has wrought so much excellence in other fields of human enterprise? Hoping that you will decide with me in favour of the regular, thorough and complete training and instruction of our young men in all the branches and science of agriculture, before they begin to farm, I will endeavour to show that we can make provision for such instruction immediately, and on a lasting foundation, by establishing a "Professorship of Practical Husbandry," at the University of Virginia, at an expense which is trifling and insignificant when compared with the object in view.

However the subject of agricultural education may be new to us, it is not so elsewhere. The greatest attention has been paid of late years to the subject both in England and Europe, where there are now several hundred agricultural schools in operation, some sustained by private enterprise alone, and others supported by government. From the experience of these schools, we learn the number of professors required to put them in operation, which we may set down at not less than four under any circumstances, though in the European schools it is often twice that number. There would be, 1st a Professor of Natural Philosophy, including geology, mineralogy and meteorology; 2. Of chemistry both analytic and agricultural; 3. Animal and Vegetable Physiology including botany, comparative anatomy and the veterinary art—and 4th. of Practical Hus-

bandry. A school might work and do much good with these four professors. But a glance shows that it would be better to have six; and still there would be very important branches of agricultural education omitted. Now if we should undertake to establish an agricultural school on this plan, it would cost us an outlay at first of little less than \$100 000 for lands, buildings, apparatus, &c., and an annual expenditure of from \$6,000 to \$10,000 to pay professors' salaries, cover repairs, &c. The resources of our society are wholly inadequate to meet such a demand. If we cannot get agricultural education at a lower figure than that, we must give it up, and grope awhile longer in darkness. But we can get it at one-fifth of this expense, by putting a professor of Practical Husbandry at the University of the State.

There is a feature in the system of instruction at the University, which is peculiar to that institution, so far as I know, and which it owes to the liberal views and far-seeing wisdom of its founder. It is this: That there is no regular curriculum of studies beginning with freshman and ending with senior, as in the old colleges. But each professor is the head of an independent school. A young man at the University may study Latin and Greek all the time and nothing else, or Moral Philosophy alone, and as long as he pleases. Whether this system is better than the old or not, is a question not under discussion here. This is evident: that it opens the way for uniting other schools to those already established. Thus a complete medical school with three professors, and a law school with two, are already in full and very successful operation in this institution. The law and medical students, while studying their profession, can attend lectures in any of the other schools. It is not a matter of doubt or uncertainty whether a school of agriculture can be grafted on this same noble stock—we have it in black and white, that it can and shall be, if we will it.

Two years ago a committee was appointed by our society to confer with the proper authorities of the two *State* institutions of learning in Virginia, for the purpose of ascertaining whether it was practicable to establish a Professorship of Agriculture at one or both of them, to be endowed and sustained out of the funds of our society;

and what amount of money would be necessary to accomplish the object, if found to be practicable. The committee performed the duty assigned to them, and submitted a report to the last meeting of the society, recommending the establishment of a Professorship of Practical Husbandry at the University of Virginia, and fixing the sum of \$20,000 as the amount necessary to endow and sustain such professorship. The committee state in their report that they received, both from the authorities of the University and of the Military Institute, the most gratifying and satisfactory assurances of a willingness to cooperate with our society in the cause of agricultural education, and a pledge on their part to use every means in their power to effect the object of the society, if it should be our pleasure to establish a professorship of agriculture in connection with the institutions under their controul. Appended to the report of the committee are letters from the Rector of the University and the President of the Board of Visitors of the Military Institute to that effect. The committee decided in favour of the University, among other reasons, because the students would not be compelled to enter on any regular curriculum of College studies there, but might pursue their agricultural studies alone; and because the authorities of that institution offered land enough for an experimental farm, contiguous to the institution, whenever the wants of the agricultural school should require it. The existence of Law and Medical schools at the University, which might be made available to enlarge the field of agricultural education, may also have influenced the committee in deciding to select the University, rather than the Military Institute.

The committee also say in their report, that in order to apprise the authorities of the University of the extent of the expectations of the friends of agricultural education in the event of the establishment of a professorship of agriculture at the University, they submitted to the Board of Visitors a brief synopsis of the subjects which ought to be embraced in a system of agricultural instruction, and indicated to the Board how much of this work could be done by the Professor of Agriculture, and how much would have to be done by Professors in other schools. They express

their belief that the subjects already taught at the University, which must form a part of every independent school of agriculture, can be so arranged as to meet all the requirements of the school of agriculture, without impairing their value to the general student; and report that the Board pledged themselves so to arrange them. To show that the course of instruction would be a full one, permit me to read the synopsis which forms a part of the report of the committee.

Synopsis of Subjects to be embraced in a course of Agricultural Lectures.

I. HISTORY OF AGRICULTURE.

1. Its origin.
2. " Progress.
3. " Condition among ancients.
4. Modern improvements.
5. Condition in different countries.
6. Relative condition in the States of this Union.
7. Special history in Virginia.
8. Relation to the State.
9. Literature.
10. History of staple crops in Virginia.
11. Laws, especially interesting to Farmers.
 - a.* of enclosures; *b.* of trespass on land; *c.* of roads; *d.* estrays; *e.* of runaways; *f.* of streams; *g.* of land titles; *h.* of statute of frauds; *i.* of bailment; *j.* of commons; *k.* of landlords and tenants.

II. SCIENCE OF AGRICULTURE.

1. Soils.
 - a.* Formation; *b.* Classification; *c.* Topography; *d.* Elements of fertility; *e.* Renovation.
2. Causes affecting vegetation, independent of soils.
 - a.* Climate; *b.* Heat; *c.* Light; *d.* Electricity; *e.* Moisture; *f.* Atmosphere.
 1. Hygrometry; 2. Meteorology;
 3. Composition of Atmosphere;
 4. Elements supplied by it to animal and vegetable life.
3. Mechanics of Agriculture.
 - a.* Law of mechanical forces and powers; *b.* Hydrodynamics; *c.* Principles of draught; *d.* Strength and durability of timbers; *e.* Lev-

elling; *f.* Draining; *g.* Irrigation; *h.* Construction of roads and bridges; *i.* do. of farm implements; *j.* House building.

1. Residences; 2. Barns; 3. Negro quarters.
4. "Rotation of crops, theory and practice.
5. Manures. 1. Analysis.
 - a.* Classification; *b.* Composition; *c.* Comparative value.
6. Botany of Agriculture.
 - a.* Principles of botanical classification; *b.* Agricultural plants; *c.* Edible vegetables; *d.* Fruits; *e.* Pesticiferous weeds; *f.* Timber trees.
7. Stock breeding.
 - a.* History of breeds.
 1. Horses; 2. Cows; 3. Hogs; 4. Sheep; 5. Poultry.
 - b.* Principles of cross breeding.
8. Labor-saving machines. Value of.
9. Insects injurious to agriculture.
10. Mineralogy and geology.
11. Comparative anatomy and vegetable physiology.
12. The veterinary art.
13. Chemistry, analytical and agricultural.

III. PRACTICE OF AGRICULTURE.

1. Preparation of the soil.
 - a.* Trenching; *b.* Subsoiling; *c.* Spading; *d.* Ploughing.
2. Methods of culture.
 - a.* of each staple crop; *b.* occasional crops.
3. Times of seeding, and methods of do., thick and thin planting.
4. Harvesting. Times and methods.
5. Marketing.
6. Farm accounts and Dairies.
7. Overseers. Notice piece in S. P.
8. Management of slaves.
9. Economy of labor much needed.
10. Principles of gearing work-beasts—
 1. horses, 2. oxen.
11. Comparative value of meadows, pastures, tilled lands.
12. Care of tools, etc.
13. Eradication of shrubs, and clearing forest lands.
14. Enclosures.
 - a.* Metal; *b.* Stone; *c.* Timber; *d.* Live.
15. Manures.

- a.* Manufacture; *b.* Saving; *c.* Application.
16. Care of live stock.
a. Soiling; *b.* Stabling; *c.* Grazing; *d.* Housing; *e.* Insects; *f.* Castrating, Spaying; *g.* Breaking to gear.
 17. Experiments.
a. on crops; *b.* cattle; *c.* culture, how made to be useful.
 18. Construction of ditches.
a. open; *b.* covered; *c.* hill-side.
 19. Dairy.
a. Butter; *b.* Cheese, &c.
 20. Household operation.
a. Slaughtering and curing of meats; *b.* Culinary art.
 21. Fuel.
a. kinds; *b.* collection; *c.* care of; *d.* wood-houses.
 22. Comparative value of foods for raising and fattening cattle.
 23. Horticulture.
a. Culinary; *b.* Ornamental.
 24. Orchard.
a. Fruit; *b.* Cider; *c.* Vinegar; *d.* Propagation of trees.
1. Budding; 2. Grafting; 3. Layering; 4. Pruning.
 25. Vineyards, fruit and wines.
 26. Grasses—Artificial, natural, their value as improvers, and grazing.
 27. Root crops.
 28. Comparative value of work brutes—horses, mules, oxen.
 29. Farm yards—1. Form; 2. Size; 3. Littering.
 30. Hay cutting, curing, stacking, baling.
 31. Green crops for manure.
 32. Marling, liming—expense and profit.
 33. Domestic manufactures.
 34. Staple crops of States south of Virginia—sugar, cotton, rice.
 35. Preservation of timbers.
a. Painting; *b.* Charring; *c.* Kyanizing.
 36. Surveying—size of fields, as compared with form.
 37. Poultry.
 38. Bees.
 39. Ice Houses.
- IV. N. B.—To the course of instruction by lecture, it will be desirable to add as soon as practicable, an experimental Farm, to be under the care of a steward appointed by the Professor of Agriculture. The committee, I hope, will excuse me for saying that their synopsis is imperfect.

It by no means includes all that should be embraced in a course of agricultural education; the classification of the subjects is artificial and unscientific; some topics are placed under one head which ought to be under a different one; and some are included which might very well be omitted altogether. I suppose it was hastily prepared to form the basis of their conference with the authorities of the University, and for that purpose it does very well. I introduce it to show how much was contemplated by our committee and the Visitors of the University when they conferred together about agricultural education, and to ask you if this does not look like doing something? The committee express their belief that all this can be accomplished if our Society will establish a single Professorship at the University. If it can, and I for one, believe it can, then never before was so much learning promised for so little money. Generally speaking, cheap learning is of little value, because its cheapness arises from the superficial character of it. But it is not so here. Those who are acquainted with the University know that learning got there is not superficial. It is as far from being so, as collegiate learning can be. The daily questions in the class rooms, and the rigid examinations for degrees prevent it being superficial. The same system of instruction would be adopted in the school of agriculture, which has been pursued in the other schools, and with the same effects. I heard a very distinguished lawyer of Virginia say, a short time ago, that he had known a graduate to come from the law-school of the University fully prepared to plead in the Appellate Courts of the State. It has been said by some of the Professors of medical colleges in the large cities, that the medical school of the University is the best preparatory school of medicine in the United States. The same system of instruction in a school of agriculture would produce the same results—our young men would be thoroughly prepared for farming, as far as that preparation depends on knowledge; and, say what we may, in farming, as much as in any other business of life, knowledge is power.

Would our sons, taught in such a school of agriculture, come home from college—farmers? I answer, no. But I say they would be prepared to become farmers by a little practice, they would be in a condition

to profit by all they saw and heard and did. They would be as good farmers however as our sons, who come home with the title of M. D., are doctors. Take two young men of equal moral intellectual parts, let one of them learn all that is taught in the medical schools, and the other learn nothing at all of medicine—which of the two would you trust your life with, if you were obliged to choose between them? There can be but one answer. Would not the same be the case between two young men of similar characters in all respects; the one taught all that is embraced in the synopsis I have read to you, and the other taught nothing of agriculture? Which of these two would you take to manage your farm, at the same wages? Which of these two would manage his own farm more successfully, and which would be the better, the more useful, the happier farmer after ten years of practise? I think there can be but one answer to these questions. I grant you that many would attend the agricultural school, and never become farmers even by subsequent experience. But so too, many without education never become farmers, from want of proper moral qualities. Agricultural lectures cannot and will not make our sons industrious, and honest and faithful. These and other virtues must be learned at home—"gremio ac sinu matris." They can be learned no where else. When learned then they generally follow a man through all his days, make him successful in any walk of life, and will make him none the less so because he is educated.

I ought not to dismiss the subject without noticing one objection to the proposed professorship which seems to me to be very forcible. It is this. That the Legislature ought to do the thing, and not impose it on us—that the State has established the law school and the medical schools at the University, and ought to establish the agricultural school too. There is much force in this view of the matter; and if I saw any hope of the Legislature doing what it ought to do, I would wait any reasonable time. But I have no such hope. Every dollar in the State Treasury is pressingly needed for other things; and if it were not, I do not believe the Legislature would give any thing for this purpose. The University already draws \$15,000 from the State annually—and although this is less than $\frac{1}{4}$ of the money given

to our Lunatic Asylums, yet there are many who think it too much, and would be disposed to make it less rather than more. Farmers feed the country; but they do not govern it; we bear the fleece but others shear it. If we kept the keys of the public fisc into which we annually pour so much treasure we would probably do many things which will not be done. Shall we go again, as we have gone before, and beg for this money, in yonder capitol, when, if things were as they should be, we might command? It does not become the master to be a beggar at the door of his slave. We are rich, let us be independent—we have the means, let us do our own work, and ask no favours, least of all let us ask them, where farmers have been so often repulsed, and will be repulsed again as often as they go thither. But there is honor to be lost or won in this matter. If the Legislature should, in some moment of unexpected sanity, give the money necessary for this work, whose would the glory be, ours or theirs? Who would rise up in after years to do us reverence and bless our names? What monument can we rear to commemorate the noble spirit of liberality which in a single night filled our coffers to overflowing, like a school of agriculture? Will any one say, "I see no honour in it?" Then I know not what honour is. Why is it that no citizen of the United States can pronounce the name of John Smithson irreverently? Why is it that if he still lived and should enter here, and I would say to you, "There he is—behold the man" you would all rise up to do him reverence? Yet we know that man only in one act of munificence—we know him only as a stranger, who loved knowledge, and gave of his substance to promote its diffusion among men. No honour in this thing? Then let Jack Falstaff teach us honour hereafter. I have heard that there are men in Virginia whose annual income is more than the sum required to establish this Professorship. If it be so, and I were of them, night's candles should not burn out, before I would give this money myself; and thereby build me a monument of glory, against which the storms of time might beat in vain.

Many plans have been suggested by which our Society may accelerate the march of Agricultural progress with its funds I

shall not say a word against one of them—but apply to them in the lines of the Roman poet—

“facies non omnibus una,
“Nec diversa tamen, qualem decet esse
sororum.”

All are good, and my heart and hand are ready for them all.

Would that our means were adequate to accomplish them all. But they are not. We must make an election between them or do nothing. Do nothing? My friends, we have done too much, to do nothing now. Even goodness pines and dies if it do nothing. Remember the nursery lesson:

“Satan finds some mischief still for idle hands to do.”

'Tis true of children; and just as true of men. We have scented the sulphur of the old fiend already in former meetings. Men cannot come together for good, that the devil does not set them by the ears for evil. Agricultural Societies have no perpetual lease of life. Their history shows them to be shortlived—like many other children of enthusiasm. We know not that ours will be an exception. We must appropriate our money ourselves, or let others appropriate for us. In twenty years it will all be gone for something. Shall we who gave it, when our hearts were full, say—what it shall go for—or learn others to decide when we have passed away? Allow me to remind you that “a good farmer attends to his own business.” God grant, that you may decide aright. But decide as you may, I go with you and stick to you, while you work in the noble cause of Agricultural improvement.

MEXICAN GUANO.

Many of our readers will remember that this is the name of a substance which, a few years since, was imported into this country from some islands in the Gulf of Mexico, in considerable quantities. The traffic was engaged in by a company, the members of which resided in New York and Boston. A pamphlet was got out under their auspices, setting forth, in an exaggerated manner, the valuable properties of the article. This document was recommended to the public by some (so-called) agricultural papers, as an “interesting work.” The most strenuous efforts were made to make farmers believe that this Mexican guano was the cheapest manure they could use. Dr. A. A. Hays came before a meeting of farmers at the

State House, and extolled it as superior to Peruvian guano,—saying he had “no confidence” in the manurial value of the ammonia of the latter. Subsequently, the Mexican article is said to have been used as the basis of the noted “Chilian Guano,” manufactured near Newark, New Jersey. The Mexican was retailed in this city at \$30 to \$40 per ton. We have in many instances requested farmers who have bought it, to inform us in regard to its operation. Their statements have in no case shown that it has proved a profitable article, and in a majority of cases, no visible effect has been produced from it.

It is probable, however, that Mexican guano has some value, as manure, and to show what this value is, we refer to a comparative estimate made by Prof. Nesbit, the Principal of the Agricultural and Chemical College, Kennington, near London. In a lecture lately delivered by this gentleman, he stated, as the result of careful investigations which he had made, that Peruvian guano might be put down at £13 12s. (\$68) per ton; Bolivian guano, £7 19s. (\$39 75) per ton; a good sample of superphosphate of lime, £6 18s. (\$34 50) per ton; “a substance lately introduced into commerce, called ‘Mexican guano,’” £2 9s. (\$12 25) per ton.

The value here put on Peruvian guano is somewhat more than the market price of the article in this country, but the comparative value of the articles named is not affected by this estimate. It will be seen that the value of Mexican guano is less than *one-fifth* that of Peruvian. And yet this value of the Mexican is said by Prof. N. to be “practically lessened by the large quantity of carbonate of lime contained in the sample.” It has therefore been sold in this country for more than thrice its real worth, and in England at a still higher rate—£8 to £9 (\$40 to 45) per ton.

Prof. Nesbit gives the following table as comprising the nearest approximate value of the several manuring matters in the articles above mentioned:

	<i>Multipliers of Value.</i>
Nitrogen - - -	£70 (\$370) per ton.
Ammonia - - -	60 (300) “
Phosphate of lime - -	8 (40) “
Phosphate of lime made soluble - - -	24 (120) “
Organic matter - - -	1 (5) “
Alkaline salts - - -	1 (5) “
Sulphate of lime (gypsum) - -	1 (5) “
Silica - - -	No value.
Carbon of lime - - -	No value.

The following rule is adapted by Prof. N. in calculating the value of manures:

“Consider the analysis to represent the components of one hundred tons. Multiply the respective amounts of each ingredient by the price per ton in the preceding table, add up the several products, and the sum will represent the value of one hundred tons. Divide

this amount by one hundred, and the quotient will be the price per ton. The decimals in the analysis below 0.5 may be disregarded, and those above that amount reckoned as an additional unit."—*Boston Cultivator.*

From the Cotton Planter and Soil.

CORN AND COB MEAL AS A FOOD FOR STOCK.

DR. CLOUD—*Dear Sir:* In the last number of the Cotton Planter, (November,) I noticed an article on corn cobs, taken from the Western Agriculturist, with comments on it by the "Ohio Cultivator," and the "Farmer and Mechanic." A word on this subject if you please.

Dr. Jackson's analysis of the corn cob gave a true or false result. Judging from his character and qualifications as a chemist, it is fair to presume it gave a true result. Now, although I have not the most implicit faith in *all the conclusions* of scientific experimenters, it would seem unreasonable to doubt the correctness of a fact like this. If chemistry can do any thing, it surely can resolve substances into their constituent elements: and if in doing this, Dr. Jackson found in a hundred parts of the corn cob only four and a half of nutritious matter, I can see no reason why we should doubt the conclusion drawn from this fact by the "Western Agriculturist," that "it is of scarcely more value to consume as food than as fuel."

I think, Mr. Editor, there is some misapprehension in regard to the value of the corn cob as food for live stock; and as I have a very small modicum of experience on the subject, I ask leave to give it to your readers for what it is worth. First, *the fact*, and second, *the inference*.

A few years back being very short of corn, I determined to economise in the fattening of my pork by having my corn ground in the ear, and then feeding it in the form of swill. The cars were first mashed or crushed in a common plaister mill, and then run through a corn mill and ground as fine as meal is usually made. My hogs did not fatten kindly. Indeed, I finally believe the same amount of corn thrown to them in the ear would have made better pork. The excrement which passed from them had exactly the appearance of the *meal of the cob*, undigested. So much for *the fact*—and now for *the inference*. I do not believe that corn cobs will fatten hogs, whatever they may do to some other kinds of stock. In hog feeding, I regard them as a positive injury. On this subject I draw the following conclusion. That class of animals which from their internal organization requires a great deal of that kind of food, familiarly termed by farmers, *roughness*—such as corn blades, husks, straw, and the like, may be profitably fed on cob meal, *provided the corn be ground with it*. If I were called upon to decide between feeding cows or

horses on the *cob meal* alone or making fuel of the cob, I should send them to the kitchen fire. So thinks your friend,
CLOD THUMPER.

From the Southern Farmer.

TOBACCO BEDS—QUANTITY OF SEED.

MESSRS. EDITORS: As the time for sowing tobacco seed is at hand, I conclude to say a few words about the proper quantity of seed to be sown. My reason for this communication is that all the directions I have seen on the subject, refer to the pipe or spoon; and as they are so various in size, I think the directions too indefinite. Therefore, say one ounce of clean seed, avoirdupois weight, to every hundred and seventy-five square yards, or in that proportion to the contents of the patch is sufficient. As it seems, modesty requires from custom a veil to be thrown over the name of the communicator, I sign myself an
OLD TOBACCO MAKER.

THE CULTIVATION OF HORSE-RADISH.

Horse-radish (*cochlearia armoracia*—from *cochlear* a spoon—the form of the leaves being rather hollow) is a valuable plant, and an almost indispensable occupant of the kitchen garden. It is but little cultivated in the South, and its uses to many modern housewives are unknown. The horse-radish delights in a rich, deep mould, and regular moisture is conducive to its growth. If the soil is poor, the roots will never grow to a large size, and although it revels in moisture, it must never be grown in a shady place, or under the drip of trees or houses. In such situations, the roots spindle too much. Knight, the famous English Horticulturist, recommends leaf mould, or any other vegetable substance thoroughly decayed, as good manure for this plant. If animal manures are used, they should be in a highly decomposed condition, as unfermented manures have a tendency to create a large leaf-top, at the expense of the root—the portion for which it is cultivated, and which it should always be the aim of the gardener to expand and improve. The first preparation necessary for making a horse-radish border, is to thoroughly spade and manure the soil to the depth of two or three feet. As it never perfects seed—though it frequently blooms—it must be propagated by sets, which are made by cutting the roots into lengths of two or three inches. The tops or crowns furnish the best slips for propagation, soon furnishing roots of fine growth fit for use. The sets should have several eyes, as it will never vegetate if these are not developed.—Knight recommends, in order to procure a supply of crowns, to plant a poor spot rather shallow, and by allowing the plants to grow without extra cultivation, an abundant supply will be obtained. In fact, it will become a nursery, lasting several years, requiring no other trouble than to keep the weeds down. This is

about the culture horse-radish usually receives in America.

It may be planted here from November to March, or during the whole season in which frost falls. The sets should be planted fifteen inches apart each way, and the ground should be trenched to the extent of two feet—the cuttings being placed along the bottoms of the trenches. The earth from one trench should be cast upon the trench preceding it, and after the bed is finished, the ground should be raked over evenly and smoothly, and kept clean of weeds, which is all the cultivation this plant requires the first year. In April or May, the long straight shoots makes their appearance. In autumn the dead leaves must be carefully removed, and the ground raked and hoed over. Repeat this hoeing the next spring, before the plants vegetate. In the succeeding autumn, the same treatment must be pursued; and the roots being now fit for use, may be taken up as desired. It is best to have three beds of different ages; for, by this rotation of use, one will always be lying idle and improving. A good plan recommended to take up the roots, is to trench along the outside row, down to the bottom of the upright roots, which are cut off above the old stool, and the earth of the next row is turned over them, and so on until the bed is finished. A bed may, by this treatment, be kept up for half a dozen years. But the best plan is to take the crop up annually, and form a new bed—observing the triennial rotation necessary to ensure perfectly matured roots; for it causes the roots to be finer, and allows the situation to be changed, which is necessary in the cultivation of most vegetables. To such of our readers as cultivate this vegetable, we shall shortly furnish the modes of preparing it for the purposes of the table. It might be made an extremely profitable crop in the vicinity of the large cities of the South.—*Southern Cultivator.*

From the Ohio Valley Farmer.

DRY CELLARS.

A *dry cellar* is conceded to be an important requisite to a good house. Health is materially impaired by a damp atmosphere, preventing a free escape of the insensible perspiration from the surface of the body by evaporation. This is so well known, that a damp house is proverbially unhealthy. How shall this be avoided, is a desideratum to many. To such, I offer the details of an effort to make a dry cellar, and the result.

In July 1853, the cellar was dug on a stiff clay soil, where it was thought impossible to succeed. The clay was thrown out one foot wider all round, than the walls were intended to be; the walls were built of stone, laid in common mortar, and faced on both sides, so that they could be plastered. The outside of the walls was then plastered with cement, and

a gutter was formed and cemented at the bottom, so as to conduct the water to the lowest corner into a drain. The space outside of the wall was then filled with broken stones, brick-bats, &c., and these covered with earth. The object was to let the water pass rapidly down to the gutter, run round to the drain, and thus pass off without entering the cellar.

The drain was made of earthenware, the first joint of which entered the wall, and communicated with the inside; the joint just outside of the wall was pierced with holes to admit the water from the gutter outside, and the drain had sufficient descent to prevent the water from backing into the cellar. About six inches common gravel was then thrown into the bottom of the cellar and graded, so as to make a gutter all round next to the wall.—Clean coarse gravel was procured and mixed with cement, in the proportion of two parts gravel to one of cement, forming a mortar with which the cellar bottom was covered four inches thick. A light coat of cement and sand was applied after the first had dried, to make the surface smooth. The inside of the walls was plastered with common plastering mortar. The windows were large, and entirely above ground, with wire screens outside, and sash filled with glass inside, and hung with hinges at the top, which were never closed except in the severest weather.

Results.—A dry cellar, well ventilated; a floor like one solid rock; no dampness, no mouldiness, no freezing, no rats.

H. J. COX.

Deerfield, Warren County, O.

THE BEAUTIFUL IN AGRICULTURE.

Both the art and the sciences of agriculture are sufficiently advanced in the country to enable its citizens to study and practice the Beautiful in planting, and in all farming operations, with entire success. Beauty in rural objects and scenery is not confined to embellishments, but is attainable in all that relates to plants and their culture, to domesticated animals, forests, parks, fields, orchards and gardens. Nature kindly favors, and often suggests agreeable features to such as have an eye to see and heart to feel the charms of beauty. She aids in a thousand ways to quicken into life and activity the dormant taste for the Beautiful placed in every bosom by a beneficent Creator. To develop and cultivate this latent and prolific source of enjoyment in mankind, is one of the highest duties of educated persons. It should prompt all to investigate the elements of beauty in natural objects, and in rural arts, whether they relate to the vegetable, animal, or mineral kingdom. With each of these grand departments of Nature the cultivator has much to do; and he should learn her processes and laws, from which he will at length fully understand that Beauty and Utility are inte-

gral parts of any wise system of farm economy.

If beauty in a country residence, in farm buildings of whatever kind, or in tillage, were incompatible with anything that is useful in agriculture, or important in household affairs, the fact would excuse the general neglect of this principle in nature. But so far from being hostile to the creation of wealth, or to its accumulation in the hands of owners of the soil, Beauty is one of the most reliable elements of money value in every species of property. In proof of this, we cite the facts that a beautiful horse often sells at from three to five hundred dollars, where an ugly one of the same weight and muscular power will bring only a fifth of the sums named. A beautiful plantation has equal advantages over one quite destitute of pleasing and attractive features.—As society advances, and the popular appreciation of lovely and captivating expressions becomes more acute and refined, it is obvious that Beauty must appreciate in cash value. Indeed, not one in a thousand knows how to turn to the most profitable account the intrinsic power and the solid merit of the Beautiful in agriculture. It is not as many suppose, a mere ideal matter, having no foundation in things substantial and enduring; but it is a material part of that perfect economy which owes its existence to the Supreme Architect of the universe. Hence, as planters and husbandmen, it is a part of our highest wisdom to cultivate that faculty within us which happily discriminates in the varied fruits of the earth, in its ever differing inherent fertility, and its wide range of really valuable plants and animals. We should study to multiply delightful objects and scenes around our homes, and improve such as nature has scattered with a liberal hand over all our acres, whether few or many.

Let us consider what it is that renders land beautiful for tillage.

Consider the first and most obvious want of all cultivated ground, and it will be seen that *fruitfulness* is the function most needed. It is, however, no more necessary to successful agriculture, than expressive of natural beauty. A rich soil clothes itself with noble forests, and if these be removed, as on extensive prairies, with the most luxuriant and nutritious grasses. Fruitfulness of the earth being an essential element of rural beauty, to impair the fertility of land is not merely to diminish its money value for the growth of crops, but to transform a landscape that once inspired universal hope, confidence, pleasure and industry, into a barren waste, which, when fairly tilled, promises little reward to honest toil, and actually yields less than it promises.

Under such circumstances, it is fortunate that Science teaches us how we can best change a sterile field, or an impoverished estate, into one distinguished alike for its elegance and productiveness. Science also tells us that it is easier and better to *preserve* the natural re-

sources of land than to restore them when removed in crops, or washed away by many heavy rains falling on shallow ploughed fields. To avoid loss in this particular, it is important to know the precise things in the soil that form agricultural plants, and how these things are both lessened and augmented in all farming operations. With this professional knowledge the cultivator may profitably increase the beauty and value of every rood of land on his plantation.

Having a critical knowledge of the constituents of soils and their products, how is one to make a truly beautiful landed estate?

This depends mainly on the circumstances with which he is surrounded. He should examine these with the utmost care, with a view to learn what is practicable, not in itself, but to a man of his means, acquirements, family ties and duties, and powers of execution. Farm buildings and fences of some kinds are indispensable: and in their construction and arrangement his taste and skill will inevitably be revealed to his neighbors and the public. A cultivated taste may be seen as well in the erection of a log cottage as in that of the most costly mansion. Nature displays the Beautiful not only in the lowly and humble violet, but in plants and animals too small to be seen by the naked eye. Wisdom in the designer may be shown as effectively in the arrangement and structure of little things as in large ones.— Dwelling-house architecture, whether in cities, villages, or strictly country residences, is susceptible of great improvement, judging from the habitations of the million. These rarely possess either convenience or beauty, or any other merit to recommend them. Even in cheapness, they fail as much as in other respects. The amount of money thrown away by the rich, and those who would fain pass as such, on expensive buildings, shows how little our taste in such matters has been improved over that of savages. Fortunes are often squandered in a few years on misshapen palaces and villas—poor imitations of European aristocracy—in this country. Some less extravagant in outlay are more *outré* in architectural folly, adding to the residence of a private family by way of ornament, what would appear to be massive columns, but which are generally made of wood, in the ridiculous ambition of appearing to live in something like a Grecian temple. In costly public edifices, columns are appropriate, to aid in supporting the great weight of marble, granite, or other structure; but nothing is more like an eagle's feather stuck into the matted hair of a savage, than the frail plank pillars or columns, painted white, so ostentatiously stuck out in front or at the sides of a dwelling-house. A worse taste can hardly be imagined. Simplicity, neatness and quietness ever indicate contentment, gratitude to God, and the promise of a long happy life. Whereas, the straining for effect always

suggests unfavorable thoughts, and not unfrequently provokes remarks expressive of contempt rather than of admiration.

Whatever contributes to the comfort of a family at a rural home, adds to its beauty, if properly placed and constructed. Thus, a well arranged kitchen, with a wood-house, cement cistern for holding rain water, and many other conveniences, are not only matters of interest, but really increase the attractiveness of a family residence. It is the judicious planning, combination and management of all the affairs, both in doors and out, on a farm, that make the farmer's life happier than that of most other men engaged in different pursuits. He has the constant assistance of those wonderful powers known as vegetable and animal vitality, to multiply his agricultural wealth and beautify his plantation. Groves of forest trees, orchards of fruit trees, as well as all the benefits of the garden, are at his command. Parks, lawns, and pleasure grounds he and his children may indulge in, if their tastes appreciate and enjoy such improvements; and it is better to cultivate a taste in this direction, than that which seeks amusement by visiting distant watering places and the gaieties of cities. To the owner and cultivator of the soil, *home* should be the most agreeable place on earth. There his best thoughts and efforts, his money and his ambition, should find full employment. Absenteeism is fatal to the Beautiful in Agriculture. A farmer should not only stay, as a general rule, on his farm, but *live* there, in the best sense of the term. This idea does not conflict with a reasonable amount of travel, either for recreation, or to obtain additional knowledge. Good books are now so cheap and abundant, that a library composed, in a large degree, of works on agricultural and horticultural subjects, is found to yield both amusement and instruction on both on better terms, and of a better quality than the planter can obtain from any other source. It is quite as easy to acquire a taste for agricultural reading, as for tobacco, tea and coffee. Man is a creature of habit; and the best way to avoid bad habits in our children, is to fix early in their constitutions, pure tastes; the gratification of which will ennoble, not degrade them. To cultivate the Beautiful in rural life has an elevating influence on society, and thereby prevents vice and crime, poverty and suffering.

Nature being the source of Beauty, we are to study her admirable processes as they are made known in the Natural Sciences. Chemistry, Botany, Geology, Vegetable and Animal Physiology, reveal to the human understanding a thousand charms in the perfect harmony that pervades every form and condition of matter, and thus perpetuate all the beauties and blessings which call into activity both the gratitude and the reasons of man. The powers within him, and the elements that surround him, act in concert to force his growth in morality and

knowledge, that he may become in each succeeding generation at once a happier and a wiser being. In connection with our moral and intellectual development, so natural and so desirable, a higher degree of social and physical comfort is clearly both attainable and susceptible of full enjoyment. It is not every person, in whatever condition he may chance to be, in reference to culture, who is capable of appreciating either the Beautiful in Agriculture or in Nature. Hence, in all nations just emerging from barbarism, husbandry, tillage, architecture, and all other arts, are prosecuted in the rudest manner. Some rise more rapidly than others in every attainment, but time is necessary to the growth of every art and the perfection of every science.

It is humiliating to our pride as a free, self-governing people, to know that in ancient Greece the beautiful in agriculture and architecture was far in advance of our highest achievements. A thousand years before the birth of our Saviour, Homer describes, in the fifth book of the *Odyssey*, a landscape in which four fountains of white (foaming) water, each springing in succession, in perfect orderliness sends the life of vegetation through a meadow in different directions. At that early period, agriculture was sufficiently advanced to have irrigation and meadows properly appreciated by the most civilized nations. We wish we could say as much for the agriculture of our own sunny South. But all must admit, that, with us, neither irrigation nor meadows are regarded as worthy of public attention. It is true, we know the value of hay, and consume many a bale from the North, for which we pay at least twice what it is intrinsically worth.

Who needs to be told that luxuriant meadows, pastures, and fine stock, add largely to the beauty, interest, and value of a plantation. Irrigated meadows and pastures are an inexhaustible source of manure for enriching the tilled lands on a farm. Where nature periodically irrigates river bottoms, the plough never exhausts the soil. Running water being nature's grand restorer in tillage and cropping, why not use it to rejuvenate our old fields, and thus render them at once both attractive and profitable? None of them are so elevated that water does not fall from above them, and run off their surfaces. Properly considered, all the moving water on continents is rain water. It creates, as well as transports from one place to another, the fertility of properly irrigated lands. The fertilizing influence of water, when judiciously applied to the earth, is well known. It is, therefore, in skilful hands, an invaluable element of fruitfulness and beauty. More knowledge and higher art will one day use water in this country as successfully in agriculture as was ever done in Greece, Italy or Egypt.

Next to irrigation, we regard the planting of the seeds of all the more valuable forest trees and fruit trees that will grow and prosper in

our climate as the most commendable practice, with a view to promote the Beautiful in Agriculture. Land is now cheap, and there is a certainty, as population increases, that the demand for lumber, and timber, for fruits of all kinds, and for fuel, will increase in an equal, if not greater ratio. By skilful planting, one may unite beauty and profit in an eminent degree. Black Walnut plank are now worth, in all Northern cities, from four to seven dollars per 100 feet. With due care, the tree grows rapidly, and its fruit possesses considerable value. A forest of this and other well known trees would add an interesting feature to any plantation, while the expense of it would be a mere trifle. There is genuine poetry in trees—in their beautiful foliage, their charming blossoms, their delicious fruits, their cool and soothing shade, their stately trunks, waving tops and graceful outlines, and all speak to the eye and soul of man in a language not to be misunderstood. It was in the light and shade of groves that man first erected his most elaborate temples, and there his ascending devotions sought communion with the Creator of all.—No wonder that groves were often held as sacred to God, and still oftener made seats of learning—the chosen schools where sages taught, and thousands studied the profound mysteries of the universe. If the history of our race shows anything good in man, it may be stated, to his credit, that noble trees, of whatever kind, inspire something akin to piety in his heart and in his thoughts. Call this, if you please, an oriental feeling: it has been too general and too long continued, not to have an abiding place in the human soul.

It is the crowning beauty of a farm or plantation, to express, in its every feature, both tranquility and happiness. Disquietude and pain will sometimes come to the best men; but their continuance should be as short as possible. It is monstrous to suppose that our nerves are made sensitive that they may feel more suffering than pleasure during our existence.—Pain and distortions are exceptions; enjoyment and beauty are the true, the natural *status* of all sentient beings. When healthy, and properly fed, the young of all animals are beautiful and happy. Such is the law of nature and hence good husbandmen improve their flocks and herds in symmetry of form, in elegance and elasticity of movement, by simply having them always in the enjoyment of suitable food and shelter. These expel deformity in a few generations, and develop nature's highest beauties. The same principle applies to the feeding and care of agricultural plants. Starve and wither them by ill usage and your seed will soon degenerate, your crops fail, and your success in planting be no better than your practice. Nature's beauties, whether in plants or animals, are fed liberally; and in this regard she teaches the cultivator to feed generously his soil, his crops and his stock. By so

doing, his land and all its products will be the best of their kind, assuming good common sense in the primary selection. Fences, buildings, and farm implements should be made of the most durable materials, that everything may indicate the settled purpose of the owner to have such an estate as will support a family in affluence in all time to come. Permanency of occupation, and durability of improvements are material elements of agricultural beauty.

A witty Englishman has remarked that in travelling through the United States, most of the houses appear to have been put up Saturday evening, with the expectation that they were to be taken down Monday morning. Much of our farm improvements are of the same frail and ephemeral character. We must learn to do our work better, or we shall greatly damage the State in which we live, by increasing its old fields, and perhaps provoke the curses of our own posterity. To injure the soil over millions of acres is a wrong of fearful magnitude. Would to God that we could see some evidence that the evil will be any less during the life-time of the writer. The error is too old and deep-rooted for that. For a little immediate gain in cotton or grain, our natural and valuable forests, the soil, and the best interests of society are all sacrificed; as if to desolate the earth were man's highest profit and greatest good! Who will try to remedy this obvious social disease and foster the study of the Beautiful in Agriculture.

L.

[Southern Cultivator.]

SALT ON THE KANAWHA RIVER.

The editor of the Charlottesville *Jeffersonian*, having been on a recent trip among the Kanawha salt mills and coal mines, obtained the following facts concerning them, which he gives to the public:

We have made some inquiries into the statistics of the salt and coal business of Kanawha and will give our readers a mere outline of the facts. There are in the Kanawha Valley, commencing about five miles above Charleston, and extending some twenty miles up the river, some eighty or a hundred salt wells. The quantity of salt annually made is about two millions and a quarter of bushels. The salt business is and has been for some years under the control of a joint stock company. This company, for the purpose of limiting the supply of salt and in order to prevent ruinous competition in the sales of salt, have rented many wells which they throw idle, and have contracted to purchase the salt made by individual enterprise at a fixed price, 16 cents a bushel. The same company is generally the

purchaser of all salt manufactured near Pomeroy, Ohio. For all purposes connected with the curing of bacon and beef, the Kanawha is worth vastly more than any salt in our markets. The salt of New York wells is a strong competitor in the Western markets. Vast quantities of money have been made in the business in this county; but, owing to the great fluctuations of the market, the hazards of navigation, and the cost of operation, very few have left the business in as prosperous condition as they entered.

The coal wealth of Kanawha is beyond all computation. In extent of mines, in variety of kinds, and in favorable locations for mining and transportation, there are no coal mines in the Union equal to them. The coal fields are principally owned by wealthy New York and English companies who are willing to expend vast sums of money in developing their resources. The best specimens of Cannel and bituminous coal are to be found upon Coal and Elk rivers. Knowing the deep interests which these coal companies—some 16 or 20 in number, have in this section, one is not therefore surprised to meet on the streets of Charleston or on the banks of the Kanawha the many intelligent and fine looking men from New York and England whom we have met with during our stay here. The salaries paid the agents of these companies average about \$6,000 per annum, thus securing the best geological and mining talent for the control of the affairs of the respective companies. The best of coal is delivered in Charleston at 5 cents the bushel.

At Stockton's mines of Cannel coal—a Welsh corruption of candle, so called because a fire made of this coal is so bright as to do away with the necessity for candles—about 20 miles above Charleston, operations have been commenced for the erection of a large factory for the conversion of this coal into oil and the residuum into candles. A ton of coal will make 40 gallons of oil at a cost of 16 cents the gallon. The residuum, after making the oil, is made into a beautiful candle of the color of clear wax. The oil thus made is very far superior in brilliancy and other qualities to any material every yet used for lights.

HEREDITARY INFLUENCE.

AN article in a late *Westminster Review* contains some facts and opinions of interest to the farmer in general, and to the breeder especially. As the entire article is beyond the limits of the RURAL, we rewrite and condense it. Of course we must abandon, in a great measure, the language of the writer; the ideas, however, we have endeavored faithfully to preserve.

That parents transmit to their offspring their own physical and mental traits, is a fundamental and very obvious law of Nature. Otherwise the utmost confusion would prevail in the animal creation. If like did not beget like, all classification of animals would be impossible. The elephant might be the parent of a mouse—the eagle of a butterfly. Every fact open to our observation shows the universal application of this law.

Again, nothing is more obvious than that offspring, frequently, in many particulars, do not resemble their parents. From this circumstance arises those slight differences which we see in families, as also those greater which we may designate as deformities, monsters, &c. This is true of mental and moral as of physical traits. It is not very common to notice a superfluity of parts—six legs where the kind have but four, two heads instead of one. In the same family we observe striking differences in stature, aspect and disposition. Brothers under the same influences will differ as much from each other as they will from any man they may meet in the street. Even in the case of twins this diversity is strongly marked. The twins RITA and CHRISTINA, who were so fused together as to have but two legs with two heads and four arms, were quite unlike in disposition.

While, then, we admit the law of *constancy of transmission*, we must also admit a modifying law of *variation*. It has been attempted to explain this by stating that it is the *species* only, and not the *individual* that is reproduced. But to this there is one fatal objection, namely, species cannot reproduce itself, for species does not exist. It is an abstract idea and not a concrete fact. It is a fiction of the understanding and not an object existing in Nature. *Nature knows only individuals*. To a group of individuals closely resembling

each other we, for convenience, apply the term species.

A survey of facts conclusively demonstrates that the *individual* and the *peculiarities* of the individual, and not those of an abstract type, are transmitted. This has been observed in the human race; and every breeder has seen repeated instances of the fact among the lower animals. Every breeder knows that the colors of parents are inherited—that their spots are repeated. CHAMBON lays it down as a principle, derived from experience, that by choosing parents you can produce any spots you please.

But another and an important bearing of this subject is found in the fact that, at times, accidents also become hereditary. A superb stallion, son of Le Glorieux, who came from the Pompadour stables, became blind from disease. *All of his children became blind before they were three years old.* Horses marked, during successive generations, with a hot iron in the same place, have transmitted the visible traces of such marks to their colts. Instances may be multiplied to show conclusively that accidental defects may be transmitted. The general law, however, is that they are not so transmitted.

Longevity is an individual peculiarity and as such may be inherited. So it is seen that longliving runs in families. This point is illustrated, in the *Review*, by numerous instances quoted from M. CHARLES LEJONCOURT'S *Galerie des Centenaires*, published in 1842.

Mental or moral peculiarities, and acquired habits are in like manner inherited. GIROU relates the case of a sporting dog, taken young from its father and mother, who was singularly obstinate and exhibited the greatest terror at every explosion of the gun, which always excites the ardor of its species. It was ascertained that the father of this pup had exhibited the same trait. It is well known that the vicious disposition of horses, dogs, &c., is often transmitted.

The inevitable conclusion, says the *Reviewer*, is that parents transmit their *individual* peculiarities of form, color, longevity, idiosyncrasy, &c., to their offspring; and that they do this *not as reproducing the species*, but as reproducing *their own individual organization*.

In all the higher classes of animals two

parents, a male and a female, reproduce themselves in their offspring. The question then arises, *What is the influence of each upon such offspring.* Each sex has, by different writers been considered most influential. Again—it has been stated that certain portions of the young have been supposed to arise from each parent.

Upon the first point Gen. DAUMAS has recently published the result of his long experience with Arab horses, arguing that, according to the testimony of the Arabs, the stallion was the most valuable for breeding purposes. In reply, the *Inspecteur des Haras*,* who had traversed Asia for the express purpose of Collecting evidence on the subject, published his diametrically opposite conclusion—that it was the mare whose influence predominated in the foal. Gen. DAUMAS replied, and cited a letter addressed to him by ABDEL KADER, in which it is said—"the experience of centuries has established that the essential parts of the organization, such as the bones, the tendons, the nerves, and the veins, are always from the stallion;" and again, "the principal qualities are from the stallion."

VICQ-D-AZIR, speaking of the mule, says:—"It seems as if the exterior and the extremities were modified by the father, and that the viscera emanate from the mother." Mr. ORTON, in his lectures, "On the Physiology of Breeding" says "the male gives the external configuration, in other words the locomotive organs, while the female gives the internal, that is the vital organs." This may be scientifically stated—"the male gives the animal system, the female the organic or vegetative." As proof of this theory, Mr. ORTON cites the well known instance of the mule—"a modified ass—ears, mane, tail, skin, color, legs and hoofs like the ass; the body or barrel round and full resembling the mare." Whereas the product of the stallion with the female ass is in the same particulars a modified horse. "The mule," says Mr. ORTON, "brays the hinny neighs."

But these results may be accounted for on another principle, that of "*potency of race*." Both are modified forms of the ass, in each of which the structure and

* Inspector or Superintendent of a Stud of horses.

disposition of the ass predominates, and does so in virtue of that "potency of race," which belongs to the ass—a potency which is less effective on the hinny, because the superior vigor of the stallion modifies it. BUFFON states that the produce of a dog and a she-wolf sometimes bark and sometimes howl. In the human family we know that a magnificent voice is as often inherited from the mother as the father. ORTON, again, states that the cross between the Cochin China cock and common hens invariably lay white eggs. He also states that BAKEWELL, of Dishley, would sell or let his best rams—his best ewes were sacred. These he would neither sell nor let.

On the other hand GIROU states that "farmers are more particular about the bull than about the cow when they want a good milking cow, for it is observed that the property of abundant secretion of milk is more certain to be transmitted from a bull than from a cow." It cannot be doubted that the bull *does* transmit his qualities to his descendants. Neither can it be denied that the female does the same. And it may well be questioned whether, as regards the secretion of milk, the influence of the cow is not as great as that of the bull. It may truly be said that, "if the organization of the male was the only one that passed to the child, the child would resemble the father, as the fruit of a graft resemble the tree from which the graft was taken, and not at all the tree on which it was grafted."

There are several perturbing causes which prevent the perfect transmission of the qualities of the immediate individual parent. The *first* of these is the influence of one gestation of the female upon subsequent ones—illustrated by the case mentioned by Sir EVERARD HOME of the mare that had a mule by a Quagga in 1816, and who produced in 1817, 1818 and 1823, foals marked by the curious Quagga marks, although she had not seen the Quagga after 1816. Other similar cases are cited.

A *second* perturbing cause is *atavism*, or the influence of ancestry. It is well known that family peculiarities of color, deformities, &c., may skip a generation and re-appear in the second.

A *third* cause is what is called the "potency of race or individual." This influence has often been obvious in the history of the human race. Among animals it

has often been sufficient to destroy all the calculations of the breeder. GIROU attempted crosses of the Merino with both the Roussillon and the Aveyron sheep during twenty-five years. The Aveyron was soon lost in the Merino; but, at the end of that time, the Roussillon was found to show itself distinctly. What is true of races is also true of individuals. It is the stronger individual whether male or female—the stronger family—the stronger race, that exerts most powerfully a modifying influence on the offspring.

Certain general facts are arrived at, which are thus summed up by the Reviewer:

1. Heritage is constant; it is a law of organized beings that the organization of parents should be transmitted to their offspring.

2. The offspring directly represents both parents, and indirectly it represents its ancestors.

3. The offspring never represents its parents with absolute equality, although it represents them in every organ. Sometimes one parent predominates in one system, sometimes in another, and sometimes in all.

4. The causes of this predominance are various, some being connected with "potency of race," or individual superiority in age, vigor, &c.; others being in the present state of our knowledge, not recognizable.

A REMARKABLE HORSE.

One of the most remarkable roadsters, of which we have any knowledge, died recently in this city. He was a compact built, showy horse, of medium size, with a proud bearing, and an eye whose fire was as unquenchable as his spirit. He was a dark bay approaching to chestnut in color, with white feet, clean limbs, and a muscular development, that, to a practical eye, told at once the merits of the animal. He was one of those horses, which, in their best days would attract attention amid a crowd of other animals, especially when in action under the harness, a fair traveler, but not the fastest on a short heat, his endurance was beyond all precedent so far as we know in the history of horseflesh on this continent.

We gather the principal facts in the biography of this animal, from an article

published in the *Daily American* of this city, in the year 1854, and re-published by request a few days since, on the event of the death of this general favorite of the sporting community, and from consultation with several gentlemen well acquainted with the horse. "Dandy" (for that was his name) was raised in the town of Greece, in this county, by Harry Olmstead, and was put into a livery stable for the first time, in the year 1835, at seven years of age, and continued in that service for a period of twenty-one years, almost without the loss of a day. He was never sick, never disabled, and always ready on the spur of the moment, to undertake any service in the line of his duty as a roadster. The endurance of this horse was incredible to those not acquainted with his powers. He has been driven seventy-five miles, time and time again, between breakfast and tea, and at one time, several years since, he was driven, by one of our millers, sixty-eight miles a day for five days in succession.

During the whole period of his service he was never at grass, for the reason that having been stabled so long he lost all relish for it; and on more than one occasion when turned loose in a field, he leaped the fence and reached home before the person who took him out could return himself to the city. Dandy has been owned and used in harness successively by Mr. Christopher, Geo. Waldbridge, and Geo. Charles; and was in the possession of the latter gentleman when he died. It is stated that this horse earned for his several owners during the twenty-one years he was in their service, no less a sum than *ten thousand dollars!*

It may be said of him, what is figuratively sometimes said of men, that he died in the harness, for, up to the last week of his life, he has been driven on the road. During two or three of the last days, he had been sick, and, on the morning of his death, was laying down unfastened in his stall; hearing some noise, or from some other cause, he got up, walked to the office which opens into the stable, thrust his head into the door, and took a survey of the inside; he then went back to his stall, pawed the straw with his feet, laid down and died. The stable-keepers say they would have given Dandy an honorable burial, only that the ground was so frozen and covered with

snow as to render it out of the question; so the brave old roadster's remains went the way of all horse flesh, that is to say, he was drawn off into an open field, and left to the dogs and crows. He would have been twenty-eight years old in the spring.

It is a matter of regret that an animal of such remarkable powers of endurance could not have been preserved as a stallion; but it occurred in his case, as it does in many others, that his rare qualities were undeveloped or at least unknown until after he had been gelded. In the case of mares, we are protected from this misfortune, and, when an animal proves herself remarkable, she can be set aside as a breeder; but in the case of the horse, the matter is past remedy. We have then only an individual of rare qualities, but one deprived of the power of reproduction.

One thing, however, still remains in our power, and that is this: the parents and kin of such a horse should be diligently sought out, and if any of them possess the qualities for which the individual is noted, care should be taken to have them perpetuated. Family resemblances and characteristics pervade the lower classes of animals as well as the human species; and every one knows how decisive these are here. An observant stranger will frequently be able to pick out brothers and sisters in a crowd from similarity of form and feature. We ourselves remember an instance of two brothers, who had been absent from home several years, one at the East and the other at the West. On returning simultaneously, they were several times mistaken, each for the other, by their own townsmen and former acquaintances.

So it is with the horse, the ox, the sheep, and, in fact, all animals. Our dairy women will bear us witness to the interest they feel in the progeny of a favorite cow, and the traits they so often see in such instances re-developed. If old "Dandy's" family were still in existence, we might reasonably expect to find in them, more or less developed, his remarkable traits.—*Wool Grower.*

The *Working Man*, an excellent agricultural paper, published in Indianapolis, Ind., states that the crop of clover seed in that vicinity was a complete failure last year, the grasshoppers having destroyed what little the drought left.

CROSSES OF THE MERINO.

MR. EDITOR;—I have been taking your journal for some time, and expect to continue it as long as its contents are of the most useful kind to all classes of farmers—in particular to wool-growers. Please let me know your advice upon pure-bred Spanish Merino bucks upon Saxony ewes. Is it a good cross, or would you advise it in preference to Silesian bucks?

A YOUNG WOOL-GROWER,
Columbiana Co., O.

February, 1856.

REMARKS.—I have always contended that the Merino sheep is a distinct species, and that it has existed for more than two thousand years, as a fine-wooled sheep, possessing certain distinct characteristics which do not exist in any other breed, and cannot be transmitted to any other by any length of breeding which is like to be followed in this or any other country. Attempts have been made at different periods, and in various countries, to improve native flocks by an infusion of the Merino blood, but there is no record to show that there has ever been a permanent and valuable improvement made. On the contrary, the result of all such attempts has been disappointment. And any man who has well and carefully studied the habits and characters of the Merino and its history, cannot well be deceived in the sheep when shown to him.

Incalculable mischief has been done in this country by an attempt to improve Merinos by crossing with other breeds. The mischief will be more apparent years hence than now. And the time will come when the few who are now breasting the popular delusion and keeping their flocks pure and uncontaminated, will reap a rich reward, not only in the sale of their sheep, but in the thanks of the country. I am very glad that there are a few men who are above all mercenary considerations, and who have the heart to practice what their good sense teaches them is natural, even at a present loss.

There can be no real and permanent improvement made in crossing the Merino with the French Merino, or with any other breeds. If you wish to prosper with your sheep, keep the breeds as pure as possible, and keep breeding from and to the best. If the French Merino be a

valuable breed, keep it pure; do not cross it with any other. That it is a pure Merino is not claimed by any person who knows the sheep and its history. That it may be a most useful sheep for this country, time must determine. It is not for me to say aught on the subject. What I most wish to urge upon sheep-breeders, is the very great importance of keeping their breeds separate. If you have good Merino, keep them so by careful breeding. If you have good French Merinos, keep them pure, do not mix them. If you put the breeds together you will get a breed partaking of the bad qualities of each,—a *hybrid*, which will depart wider and wider from the good points of each breed by each remove.

The importance of pure blood is felt now all over the Union; and any man who can show a clean pedigree from the Humphrey or Jarvis importations, would find a ready sale for all his sheep at very high prices. I very much doubt whether there be any such in the Union. There may be purer blood in some localities than others, but there is none that has not been mingled with some other than pure Merino. The Saxon cross, when the blood was pure, was not so detrimental as where the cross has been made out of the race; for the Saxon is a Merino, and crossing does not contaminate the blood by introducing coarse or native blood along with it.—P., in *Wool Grower for Jan.*, 1853.

REARING LAMBS.

The rearing of lambs, both for the renewal and increase of the flock, and for the use of the butcher, is a matter which deserves more care and attention than is usually bestowed upon it by our farmers. If the bucks or the ewes are not in good condition at the time they are brought together, or if the latter, during the period of gestation become reduced and weak, the chances are that the progeny will fail altogether, or at least lack the vigor necessary to carry them successfully, through the first winter. We do not mean by "good condition," that the sheep should be fat, for that extreme should be equally as much avoided as the other; but they should be vigorous and healthy, and in first rate store order. A healthy buck should not be required to serve over fifty to sixty ewes, as such a

number is a sufficient tax upon his powers; more than this is liable not only to permanently injure the male, but also to produce a feeble progeny.

The period of gestation for ewes is twenty-one weeks; so that, where it is desirable, the birth of the lambs should occur early in May, the bucks are turned into the flock about the first of December. This period may be varied a little either way according to locality and climate. As young ewes are more apt to be careless and improvident mothers, neglecting, and sometimes disowning their lambs; more attention is required for them than for older sheep. Many of the English shepherds separate the former in the fall, and serve them a week or two later, in order that the season shall become further advanced, and the lambs less exposed to a chill and adverse temperature. The ewes with lambs should be kept quiet, not subjected to fright or excitement, well fed and comfortably sheltered. The successful rearing of a fine young flock will amply repay the farmer for all his care.

Where twins are produced by some of the sheep, while at the same time others have lost their lambs, it is a good plan to take one of the twins from the former and give it to the latter. Some difficulty is occasionally experienced to get the lamb adopted, but it is usually overcome by shutting it and the new mother together for a few days; and in extreme cases, binding the skin of the dead lamb upon the back of its successor. Bucks, by carelessness or inadvertence, occasionally get mingled with the flock unseasonably, and occasion much trouble, and sometimes loss. We once knew a farmer's flock of ewes got with lamb in September; and, as a consequence, they gave birth to their progeny in February. He kept them sheltered and well fed, making roots and other succulent materials a portion of their food, turning all his barns and out buildings into sheep-hospitals, and devoted much time and attention to the helpless lambs brought forth in the midst of a rigorous winter. It thus turned out that scarcely a lamb was lost, and at the subsequent washing and shearing, that flock of lambs was the admiration of all who saw them. One of the ewes, after her lamb was born, failed

to give it suck, although the udder was distended, and apparently full of milk. On an examination, however, and attempt to milk the dam by hand, a thick fluid exuded, nearly of the consistence and appearance of candied honey, which the lamb swallowed with avidity, although its own strength was insufficient to draw it from the teat. The lamb thrived upon it, however, swallowing as it was pressed out by the hand, until in the course of a couple of days, the milk assumed its natural flow, and needed no further special attention. This instance is cited, not for the purpose of urging the month of February as one propitious to the birth of lambs, but only to show that even an untoward event, if properly managed, may be turned to profitable account.

Where lambs are designed especially for the butcher, as early a period of birth as is consistent with safety is desirable. Like any other production in the market, early and well-developed specimens command the highest price and the readiest sale. We find by reference to our market reports of last year, that fair spring lambs fit for the shambles were, in Rochester, worth, the season, commencing about the middle of July, one dollar and a half; and in the New York market, from two to five dollars each. Let us assume, as a basis of calculation, for the profits of lamb rearing for the market, the following data in a flock of sixty common woolled, well-developed ewes. These, if properly cared for, will, by offsetting the twins against the losses, raise one lamb each. Setting aside ten of the best ewe lambs as substitutes for ten of the oldest dams, whose powers will soon begin to fail, we have left fifty for sale; and the debtor and credit sides of our account will stand as follows:

Stock account.	Dr.
To sixty medium woolled ewes at \$3	
each, - - - - -	\$180 00
Interest on investment one year, - -	12 60
	\$192 60
Contra.	Cr.
By 60 fleeces 3 lb each at 30c. $\frac{3}{10}$ lb, -	\$54 00
*By 50 lambs for slaughter at \$1 50, -	75 00
By 10 ewes displaced by lambs at \$3 00, 30 00	30 00
	\$159 00

* NOTE.—The profit on lambs in many parts of Virginia is about double what is here stated.—Ed. So. PL.

This sum is nearly eighty-three per cent. on the capital invested, and by substituting ten lambs annually for the oldest sheep, the entire flock is renewed in six years, and therefore subject to no deterioration. In the above calculation it will be observed we have made no account of the *keeping of the flock*, an important item it must be admitted; but the best figures we could give would only be proximate, and inapplicable to many localities. We, therefore, leave that for each farmer to determine for himself. Within any reasonable bounds the above margin leaves ample room for profit, and we have no doubt our farmers will assent to the proposition when we say, that rearing lambs for the butcher, taken in connection with the fleece of the dam, is a profitable employment where the soil and other circumstances render it available. There are other pecuniary considerations worthy of note in this connection, viz., the rapidity with which a return is obtained, and the regular annual period of its receipts. In the rearing of horses, for instance, several years must be awaited for a full development of the animal, and the interest of the money lost through all the intervening time. Again, the individual instances of casualty and loss will not be so severe. There is a wide difference for instance in the loss, say of half a dozen sheep at three dollars each, and that of a valuable colt worth two hundred. Other considerations might be mentioned equally cogent, but with the above suggestions, we leave the subject at present to the consideration of our readers.

ENCOURAGEMENT OF SHEEP HUSBANDRY.

The principal articles of profit resulting from the rearing of sheep, or at all events that one which is chiefly taken into account by the farmer, viz., wool, has not for the past two years brought a price in the market quite so satisfactory as many other articles of farm produce, particularly grain. While the best staple of wool raised among us would, with difficulty, find a market at forty cents per pound, prime wheat has commanded in cash, from two dollars to two dollars and twenty-five cents per bushel. Reckoning the weight of fleeces at three pounds each, which is a

high figure for the average of fine-wooled sheep, and then multiply the price obtained by the number of sheep an acre will ordinarily sustain, it will be seen that, on comparing the value of the product with that of an acre of *good wheat*, say twenty bushels, the balance will be vastly in favor of the latter.

Theoretically then, so far as profit is concerned, it would be much more beneficial for a farmer to sell off all his sheep and other stock, put in every acre of his farm to wheat, and repeat it every year. But in practice, such a course of procedure would be the worst possible economy. A farm so treated would become impoverished in the first ten years; the twenty bushels of wheat which might, if all things favored, be produced the first year, would speedily dwindle down to nothing, and a long and expensive system of manuring would have to be resorted to in order to restore to the land its original fertility. But the experience of our farmers in the raising of wheat comes in again in opposition to this theory of profit. The casualties that attend its culture, and the injury to the crop from its many enemies, both animate and inanimate, all combine to render its profits doubtful. The Hessian Fly, the Midge, the killing effects of frost in winter, and the disastrous blighting of the rust in summer are heavy drawbacks to the certainties of a good crop.— There is no moment of safety from seed time to harvest, nor even then. The brightest hopes of the wheat grower last season were blighted at the latest moment by untimely rains. We do not intend here to maintain that wheat raising is unprofitable, but merely to say that actual experience does not come up to the theoretical profits of its cultivation.

Other grain crops are more certain of success, but not so profitable in individual instances. Corn is generally a sure crop, but that finds enemies in vernal and autumnal frost, the crow, the cut-worm, excessively cold wet summers, and other drawbacks. Oats is one of the surest grain crops, but it is at the same time the lowest in price and among the grains yielding the least profit, when at the same time it is very exhausting to the soil.

The great branch of farming, aside from the cultivation of grain, is the rearing of domestic animals. In many portions of

the country it is made the leading pursuit, as the lands are better adapted to grazing than tillage; but even in our best grain producing sections, it would be of great advantage to pay this department more special attention. The agriculturist, who constantly cuts and carries away the products of his soil, will be certain to bankrupt its fertility. The sure way to obviate this undesirable result is to keep upon the place the largest number of animals that can be made profitable, and then economise their manures to be returned to the soil as a compensation.

A flock of good sheep ought never to be omitted from the catalogue, as they can be kept at a comparatively small cost, and as a general thing, give an ample return. The fleece, which is considered the chief item, comes into the market at a time when the farmer has little else to dispose of, and its sale is often relied upon as the only resource for the payment of spring interest and instalments, and the necessary summer expenses. Although at times the value of the staple rules low, there is always certainty of a cash market at some price. The fleece of the sheep is an article of absolute necessity to the whole civilized world, and hence no fear need be entertained that a change of fashions, of tastes, or of pursuits will permanently endanger the profitableness of its production. There must be variations in the price of wool, as in that of all other products; but any unusual depression of a year or two years' duration will be followed by better times, and we see at present, indications of this returning tide.

But, aside from the value of the wool, there are many other considerations in favor of sheep raising to a certain extent by nearly every farmer. The rapidity of increase of the flock is an important consideration. The ewes are competent to become dams the second season, and not unfrequently the twins produced are sufficient to more than compensate for all the losses that may occur during the whole year. The young farmer of limited means, especially at the West, whose income as yet amounts to just sufficient to meet his expenses, cannot purchase stock extensively and of the most expensive kind; he must be contented to wait until he can rear them himself, and this is an operation that requires time. Sheep come to ma-

turity and increase much faster than neat cattle or horses, and will afford him a nucleus around which, in a few years will be clustered animals of all kinds which he desires; for the wool and the increase of his flock can be sold and the money re-invested, or an exchange be made of them for other cattle.

We recollect, not over twelve or fifteen years ago, when sheep were slaughtered in the town of East Bloomfield, in this state, by the hundred thousand annually; their carcasses, except the hams, were tried up whole, and the tallow sold in New York, wholesale, at six cents the pound. The hams were distributed by peddlers all over Ontario and the neighboring counties at one dollar and a half the hundred weight, and farmers, then considered sheep raising profitable employment. The dressed carcasses of just such sheep will sell in our streets to-day for four or five cents per pound, and the pelt is worth at the same time, one dollar more; thus netting the farmer from three to four dollars per head, and a good fat sheep on the foot in New York city, will bring from five to eight dollars. We know a young farmer in a neighboring town who refused, last fall, ninety-five dollars for fifty good grade lambs one year old next spring.

HINTS FOR YOUNG GARDENERS.

Cultivate nothing carelessly. Whatever is worth cultivating at all, is worth cultivating diligently and well.

Many kinds of garden seeds lose their germinating power when more than a year old. Therefore, be careful to sow fresh seed whenever practicable.

But melons, cucumbers, pumpkins, and members generally of this family, are an exception to this rule. The seeds of these should not be sown till after they are several years old. Plants from old seeds produce less foliage, and more fruit. [Doubtful, *Ed.*]

The seeds of most kinds of weeds retain their germinating power for an almost indefinite period. Hence, weeds should always be carefully gathered and burnt, as the most effectual mode of destroying the seeds.

The first leaves which appear on the surface (in many cases called *cotyledons*, are, for the time, the sole supporters of the

life of the young plant. They sustain it till it has formed roots, and, if prematurely destroyed, or much injured, the plant will die.

Seeds will not germinate unless exposed to the influence of moisture, air, light, and heat. They should, consequently, not be covered too deep, or they may fail to sprout.

It is in ordinary cases, not profitable or advisable to raise your own seeds. Your soil and your time should be of more value and importance to you than the cost of new seed. Besides, such as is raised on a soil different in composition from your own, will most probably thrive better.

The roots of very young plants are rarely hardy enough to bear transplanting well. The best time for transplanting seedlings, is when they have formed five or six leaves; because, about that period the young roots and radicles are able to perform their proper functions more successfully than earlier.

Roots essentially require the admission and presence of atmospheric air. The surface soil should, therefore, always be kept loose and porous, and clayey ground should be frequently broken up or stirred in dry weather, or whenever it has become parched or baked.

When a bed has been dug over in the fall, it should be suffered to lie, during the winter, in the roughest condition in which the spade has left it. A greater amount of surface will thus be exposed to the effects of frost, and the ground become more thoroughly pulverized in the spring.

Frost acts with greater severity on roots or tubers which have been pulled or dug up, than on such as remain in the ground. Hence they should either be effectually protected, or remain altogether undisturbed.

The various kinds of plants extract different substances from the soil; and a well-chosen rotation of crops is consequently highly advantageous, and deserves attention.

Leaves absorb moisture from the atmosphere, and again part with it; they inhale and exhale air, and thus constitute the more important organs of plants. If injured or removed, the entire plant suffers accordingly.

The pores of the leaves, through which air and moisture are transpired, are exceedingly minute, and very liable to be

closed by dust. The foliage of stove plants should therefore be frequently well sprinkled with pure water, to prevent or remove obstruction to healthy action from this cause.

In their natural condition or growth, the leaves and branches of plants rarely touch or cross each other. We should hence learn not to crowd our plants close together, or to place even a single plant in a confined position, where its leaves and branches have not room to expand or develop themselves fully and freely. Air and light are as essential to their vigorous and healthy growth as earth and water.

The falling off of the leaf of a newly-set cutting, is an indication that the cutting has begun to grow. But, if the leaf wither and dry without dropping from the stem; it is an evidence that the plant lacks vigor to effect the natural process of shedding the leaf, and will probably fail to grow.

When bushy plants produce an abundance of foliage with few buds or blossoms, they should either be transplanted into a poorer soil, or some of the principal roots should be pruned off.

Drying winds are injurious, as they rob the leaves of plants of moisture more rapidly than it can be supplied by the roots. Plants need as careful protection from such winds as from frost.

When a grass-plot becomes pervaded by moss, apply some fine, rich manure to the surface. This will reinvigorate the grass, and enable it to subdue and expel the intruder.

In pruning, always make the cut *towards* yourself. Enter the knife on the side opposite the bud, a little above its base, and cut through, sloping to just above the top of the bud. The vitality of the terminal wood will thus be preserved, and the wound speedily heal over.

Leaves grown in the shade, or in the dark, do not attain the depth of color, nor the harshness of taste which mark such as are fully exposed to light and air. Gardeners take advantage of this when tying up lettuce or endive, and earthing up celery, to *blanch* them.

Light is essential to enable flowers to develop their colors fully. Hence the proper place for flowering plants, in chamber culture, is as near the window as possible.

All plants have naturally a resting season. Seek to ascertain the period peculiar to each particular species you cultivate, and transplant them only at that time.

Plants are in their most vigorous state of growth at the time of flowering, and should not then be transplanted, as they would very likely suffer much from the operation.

But the period of flowering is much the most suitable for making cuttings, because the tendency to root formation is then most active.

Plants in flower have all their juices in the most perfect state; and this period should be chosen to gather such as are noted for aromatic or medicinal qualities.

Excessive blooming greatly exhausts the plant. Hence, all flower buds should be gently pinched off ere they open, from newly-rooted cuttings as well as from weak or sickly plants, to preserve the strength of the stalk.

Few plants can well endure great changes of temperature; and none should therefore be transferred directly from the hotbed, or hothouse, to the open air. Warm weather should be chosen for the removal of plants, even from an orangery or cold frame, to the garden.

All withered and faded flowers should at once be removed from perennial plants, unless it is desired to raise seed. This will tend greatly to prevent the premature exhaustion of the plant.

To secure a succession of bloom in a rose-bush, prune back some of the shoots to their eyes as soon as you see that they begin to swell; and defer the pruning of others till the leaves have become expanded. In the first case, the eyes will break into bloom early, whilst the latter will not begin to swell till the others are in full leaf, and consequently bloom later.

As a general rule, the smaller the number of fruits on a healthy, vigorous plant or tree, the larger the size, and the more perfect the taste. It is hence proper, in all cases, to *thin out* moderately. But a single gooseberry left on a bush, or a single cluster on a large grape-vine, however *monstrous* be its development, is only evidence of a sound principle misapplied or carried to extremes.

Fruit should always be gathered in dry, calm weather. It should be removed by hand, and carefully placed in a basket, so

as not to bruise it. Roughly handling it may, and probably will, cause it to rot.

If, when any of my fruit-trees are in blossom, I suspect that the soil does not contain the requisite amount of moisture needed by the roots, I dig a trench around the tree about eighteen inches from the stem, and pour into it four large bucketsful of water, and immediately return the removed ground. This enables the blossoms to resist the effects of drying winds; the fruits *set* perfectly, develop rapidly, and are less liable to the attacks of insects. The result is, that the fruit does not subsequently drop. I have cherry-trees that formerly bore fruit only every alternate year, which are now annual and abundant bearers, in consequence of this treatment. C. V. GOLDACKER.

According to the researches of Messrs. Schubler and Kohler, of Tubingen, white flowers are the most numerous in nature, and, at the same time, the most fragrant. Red flowers come next in order.—*Quoted in Horticulturist for Nov. from the Frauendorfer Blatter.*

[From the Country Gentleman.]

LANDSCAPE GARDENING.

Those who are contemplating landscape improvement, may be reminded that now is the time to take preparatory measures for the labors of the coming Spring. Much that requires a good start before progress can be expected, may now be accomplished, as well as to wait five months hence.

Drives and walks may be laid out and bedded; these should be broad and deep.

Instead of the many formal stiff lines that are common in walks, there should be exhibited more of the elegant, easy, flowing lines, which render so much of grace to a charming landscape.

By making these preparations during the autumnal months, the advantage of the cold weather action upon the ground is gained.

Trees and shrubbery, if set out in the Fall, get nearly a year's start of those delayed until spring; and in planting do not set them in lines and squares, but form them in clusters, or elegant groups, about your grounds. This is much more artistic and beautiful than the former and old fashioned manner.

Care and taste are quite necessary in

grouping trees, and this will afford a fine advantage for the study of effect.

Plant your trees in groups of three, four, or half a dozen; intermingling the maple, the evergreen, and the elm.

Be careful that the trees you select, and the forms you create, in a measure harmonize with the style of architecture of your house; caring, too, that they hide from view some ungainly object in the adjoining landscape.

Next may the soil be renovated, the grounds graded, trees trimmed, and many things accomplished, that at one time or another, before vegetation begins, must be done. All this preparation will serve to give Dame Nature the opportunity to commence work as early in the spring as she may fancy.

An uneven, wavy surface of ground, is preferable to a dead level, because in it there is more variety, and consequently more beauty.

Trees handsomely grouped and irregularly placed over your grounds, are more artistic, and more interesting than when planted in regular order; because there is greater beauty arising from variety and harmony, than from symmetry.

Easy and sweeping curves of line, whether of road, ridge, walk or drive, are much more beautiful than straight lines. Stiffness mars a landscape.

Rural ornaments placed about your grounds, not symmetrically, nor at random, but irregularly and meaningly, in their fit places, and to serve some utilitarian view as well as ornamental end, are sources of great interest to the effect you wish to produce.

Before commencing your labors, just map the whole picture in your mind; know what you are to do before hand, and you will accomplish more at the end, and produce a finer effect.

Landscape gardening is a noble, elegant art, but painful to say, it is sadly in the back-ground. It is deserving of much greater encouragement at the hands of our countrymen than as yet it has received; and more particularly so when we consider that it is an art contributing so largely to our every day happiness. Matters, however, are fast progressing, and ere long we shall witness as excellent land-

scape in our midst, as can be exhibited by any of the countries of the old world.

W. T. HALLETT, *Architect.*
Norwich, Ct., Nov. 1856.

RAISING MUSHROOMS.

Mr. Blot, a French gardener, near New York, states that he has a garden at Harlem where he can grow eighty to one hundred quarts a day of mushrooms upon an acre. The beds are made at the bottom of trenches three feet deep, rounded up fifteen inches high, the trenches being covered over with boards. A bed will last five or six months without renewing. The plants come naturally from decomposing horse manure, but he hastens the growth by planting the spawn or seed of the mushroom, which is to be found in old beds of horse manure, in a suitable state of decomposition. The plants continue growing in the trenches summer and winter, and are gathered daily as they come to perfection, and sold to restaurants and hotels at about 37½ cents a quart.—The supply is very much behind the demand, and in consequence large quantities are imported in a preserved state. Mr. Blot states that there is nothing in the climate to prevent growing, in New York, all that the city could consume. The following calculation will show the profit of growing mushrooms:

To cultivate an acre, two men and two horses would be required.	
Expenses of horses, say	400
The labor of two men, say	730
Rent of an acre of vacant city lots,	400
Total,	\$1,530

A sale of 80 quarts a day at 36 cents, will produce \$28 80 per day, or \$10,512 per annum. This would give \$8,982 as the net profit of one acre of the many vacant ones lying idle in and about this city, and we are assured that it would take many acres to supply the demand at the price stated.—*Southern Cultivator.*

Have a place for every tool, and never leave one out of its place; or to go farther, "a place for every thing, and every thing in its place."

COOKING FOOD FOR HOGS.

Experiment of SAMUEL H. CLAY, of Bourbon County, Kentucky.

The advantages of cooking food for hogs and other farm animals, have never yet been duly appreciated by American farmers; although numerous experiments have been made (usually upon a small scale, it is true) that have gone far to demonstrate its importance.

In the October No. of the *Valley Farmer*, we published an article on this subject, in which we gave the result of the valuable and interesting investigations of Dutrochet, Dumas and Raspail, going to show the mysterious and beautiful operations of nature in the formation of the various grains and roots which enter into the food of man and beast, and of the necessity of their being submitted to a certain degree of heat before their *entire* constituents could be reduced to that condition most available for digestion and assimilation. In that article we alluded to an experiment in feeding hogs, then in progress by Samuel H. Clay, Esq., of Bourbon Co. Ky., and promised to give our readers the result as soon as the facts could be ascertained. Mr. Clay has since very kindly furnished us with a statement in full of the number and weight of the hogs, the quantity of grain they consumed, the form in which it was fed to them, and the gain of each animal under the different forms of treatment.

Mr. Clay's experiment was commenced on the 16th day of July, with six barrows, each about twelve months old. We shall indicate each hog by the same number

throughout the experiment. Their several weights, at the time they were put up, were as follows:

No. 1, 255 pounds.	No. 4, 240 pounds.
No. 2, 285 "	No. 5, 265 "
No. 3, 240 "	No. 6, 245 "

These were all fed for twelve days alike, on cooked meal, reduced to a thin slop, so that they could easily *drink* it; and also on dry corn at the same time. At the end of twelve days they were again weighed, showing the following increase:

No. 1, 294 pounds.	Gain, 39 pounds.
" 2, 318 "	" 33 "
" 3, 290 "	" 50 "
" 4, 276 "	" 36 "
" 5, 290 "	" 25 "
" 6, 282 "	" 37 "

The hogs were then separated. Nos. 1 and 2 were put in a pen to themselves, and fed on boiled corn thirty days. The corn consumed was 390 pounds, or 6 bushels and 54 pounds, when dry. Under this treatment No. 1 gained 50 lbs.; No. 2 gained 52 pounds. The two together gained 102 pounds.

Nos. 3 and 4 were put together in a pen and fed the same length of time on boiled meal, reduced to *thin slop*. The meal consumed, when dry, weighed 270 pounds, equal to 4 bushels and 46 pounds. No. 3 gained 30 pounds, and No. 4 gained 50 pounds—both together gained 80 pounds.

Nos. 5 and 6 were fed on dry corn for the same period, and consumed 405 lbs., equal to 7 bushels and 13 pounds. No. 5 gained 10 pounds, and No. 6 gained 32 pounds, or both together gained 42 lbs.

We illustrate the whole in tabular form as follows:

Nos.	Bushels consumed.	Gain in 30 days.	Lbs. of Pork to 1 bu. Corn.	Corn per bushel.	Cost of Pork per pound.
1 & 2	6 and 54 lbs. boiled corn.	102 pounds.	14 lbs. 65-100.	23 cents.	1 cent 9 mills
3 & 4	4 and 46 lbs. " meal.	80 pounds.	16 lbs. 61-100.	do	1 cent 6 "
5 & 6	7 and 13 lbs. dry corn.	42 pounds.	5 lbs. 80-100.	do	4 cents 8 "

At the end of 30 days the hogs were changed and fed as follows:—Nos. 5 and 6 that had been fed on dry corn, were changed and fed on cooked meal for 26 days; they consumed in that time 234 pounds of meal, or 6 bushels and 10 lbs. No. 5 gained 40 pounds, and No. 6 gained 34 pounds—the two together gained 74 pounds.

Number 3 and 4, that had been fed on

cooked meal, were fed the same length of time on dry corn; they consumed 364 pounds, or 6½ bushels. No. 3 gained 34 pounds, No. 4 gained 10 pounds—the two together gained 44 pounds.

Nos. 1 and 2 were continued on the boiled corn with about the same results as on the first trial. The following table shows the results of the second trial:

Nos.	Bushels consumed.	Gain in 26 days.	Lbs. of Pork to 1 bu. Corn.	Corn * per bushel.	Cost of Pork per pound.
5 & 6	4 and 10 lbs. boiled meal.	74 pounds.	17 lbs. 72-100.	28 cents.	1 cent 5 mills.
3 & 4	6 and 28 lbs. dry corn.	44 pounds.	6 lbs. 77-100.	do	4 cents 1 "

It will be seen that during the *twelve* days, when the hogs were first put up and all fed together on cooked meal, that No. 5 gained *twenty-five* pounds, which on the first trial after they were separated and fed *thirty* days on dry corn, consumed 202½ pounds, and gained but *ten* pounds; this, estimating the corn at 28 cents per bushel, brings the meal at 10 cents and 1 mill per pound; and when changed again on the second trial, to boiled meal, consumed but 117 pounds in *twenty-six* days, and gained *forty* pounds, which, at the same rate per bushel, reduces the gain to *one* cent and *four* mills per pound.

No. 4, in the first *twelve* days, fed on the cooked meal, made a gain of *thirty-six* pounds, or *three* pounds a day; and when separated and continued *thirty* days on cooked meal, consumed but 135 pounds, and gained *fifty* pounds, which brings the cost of the meat to *one* cent and *three* mills per pound; but when changed to dry corn on the second trial, consumed 182 pounds in *twenty-six* days, and gained but *ten* lbs., which again increases the cost of the pork gained to *nine cents* and *one mill* per lb.

In conclusion, Mr. Clay states: "I now give my mode of preparing the food. I have two large 60. gallon kettles, fixed upon small furnaces, (Mott's agricultural furnaces,) that when full hold but a small armful of wood. I put 50 pounds of meal to a kettle, and then fill it with water; when cooked this makes 405 pounds of slop. I find that my cows and horses are very fond of it, and improved finely on it. I am of opinion it would be better to cook food for all kinds of stock."

Mr. Clay did not take into the account the quantity of wood consumed, as that was chips and trash picked up on the farm.

With an apparatus arranged upon a large scale, something as we proposed in our October number, the cooking, we believe, could be done much more economically, both as to fuel and labor.

The experiment shows the advantages of cooking food for hogs, even more conclusively than we had anticipated, or in the articles we have frequently written on the subject, even claimed for it.

The gain of the hogs fed on cooked meal, is about *three* times as great as the gain of those fed on the dry corn, although we think the difference in favor of the cooked meal would have been still greater had the hogs not received the start of 12 days feeding on cooked meal before the experiment of putting them on dry corn was commenced.

Whether the slop fed in this instance was reduced to that consistence calculated to give the most favorable results, is still a matter for further experiment. Somewhat less water might have given a greater gain; for it will be seen that the hogs that were fed on the boiled corn, although they eat more pounds, it was less expanded in boiling than the cooked meal, and the hogs gained considerably more in the same time than those fed on the meal, though they eat more corn.

Farmers heretofore have failed to cook the food for their stock under the impression that the saving would not be equal to the trouble and expense of the operation. Mr. Clay's experiment proves that *one* bushel of corn fed in the form of cooked meal, is about equal to *three* bushels of corn fed dry, making a saving of more than 60 bushels in 100 bushels of corn. Now we believe that with a properly constructed steam vat, 100 bushels of corn in the form of meal, can be cooked at a cost not exceeding the market value of *ten* bushels of corn. Nor is that all that may be gained by this system of feeding. If a hog fed on cooked meal can be made to gain 50 lbs. in the same time that another hog (equal in all respects) will gain 10 pounds when fed on dry corn, bringing it to the maturity of 200 or 300 pounds in the same time that one fed on dry corn can be made to weigh 100 pounds—thus avoiding the risk, trouble and expense of more than half the lifetime of the animal—then certainly every farmer should adopt the system of cooking, without delay.

Valley Farmer.

If we all had windows in our breasts, we would take good care to keep the blinds down.

ONE SQUARE FOOT OF BOARDS,

WORTH MORE THAN A POUND OF BEEF
OR MUTTON.

"A preposterous and random assertion," we fancy, that we hear a reader say, "Why, it is ridiculous and absurd to suppose, that one pound of beef, which is worth from five to fifteen cents, is worth no more than one square foot of common boards, which can be attained, in almost any region, for about one cent for every square foot! Such an article is not worth reading!"

Hold, gentle reader, spare your remarks, and we will show you, beyond a doubt, that common boards are worth far more than we have been wont to suppose.

How many pounds of flesh will a few such snow storms, as we had in the winter of 1854 and '55, use up, or destroy? in a herd of six or eight cattle. How many pounds of mutton will be used up, in a flock of one hundred sheep during a severe north-wester, when old BOREAS tunes his harp high; and drives the fleecy snow into every crack and crevice; and piles high the drifty heaps? We all know, that at such times, we must keep our doors and windows tightly closed; and thrust in more, and more fuel, into our stoves; and cram our stomachs with wholesome food, in order to keep up a degree of comfortable temperature. We all know, when any substance that will freeze, is exposed to the winds, in a bleak place, that it will freeze, while more of the same substance, only a few feet from it, protected by a breast work of boards, or anything to check the force of the wind—of the same temperature—will not be frozen. The truth is, in a current of air, the caloric is dissipated, or carried off; and, unless there is some means in operation, to keep up the desired temperature, injury will follow.

So with animals; if they be placed in a situation, where they are *comfortable*—not exposed to the driving storms, and piercing winds—even if their place is of the same temperature of the surrounding atmosphere they will retain their plump and thriving appearance. But let them now be exposed to a current of air, and the snow and rain, and see how soon they will begin to draw up their bellies, and to

bring their hind feet toward their forward feet.

Every chemist knows that evaporation is a cooling process. When the body of an animal is wet, evaporation immediately commences, and much of the caloric or heat of the body is dissipated in this process. The stomach, at such times, must be crammed with nutritious food, in order to supply the fuel of the body. When the contents of the stomach is exhausted, if an animal has any fat laid up in store, Nature draws largely, from these sources, to supply the material for the necessary heat of the body; and if it takes but a short period of time to consume a pound of fat, and when animals arrive to that point, when nature must draw upon the materials of the body, to furnish necessary heat, animals begin to deteriorate in condition. They must have heat, and *will* have it, and if we can manage to *retain* the heat, after it has been produced, it subserves a better purpose to retain a given amount, than to attempt to furnish new materials for unnecessary waste by rapid evaporation and currents of air.

To retain the heat, then, and to prevent the materials of the body—fat and flesh—from being used up in unnecessary combustion, is the main idea to be kept in view. Suppose, now, that a herd of ten cattle, cows or oxen, use up one pound each of the materials of the body in twenty-four hours, in keeping up the necessary heat—and this is a very small computation—we have ten lbs., which is worth nine cents per lb., cash, at the lowest calculation, because the very best materials are used up first, and in many localities, we might reckon it much higher, with all safety. This would make in seven days \$6 30, and in thirty days \$27 00 worth of valuable beef. This \$27 00 would have purchased, in almost any lumber region, two thousand, seven hundred feet of good boards, which would make an open shed on one side, six feet high on the back side, covered with boards twelve feet long, about one hundred and forty feet long, or a shed on two sides of a yard, sixty to seventy feet in length. If now, this 2,700 feet of lumber will so check the wind, as to be the means of retaining this \$27 worth of beef—and who doubts, for a moment, that this is not a very small computation—we save enough in one

month, to cash the lumber bill, and in two months, enough to pay for hauling, fitting up, and interest on that amount, and the third and fourth months we take such an investment a money-making operation. And this is not all; a shed 60 or 70 feet long on each side of a yard, will shelter a great many loads of manure, and every good farmer knows that one load of manure, which has been sheltered, is worth as much as two loads which has been exposed to all the snows and rains of winter and spring, and sometimes one load of sheltered manure is worth more than three or four loads of unsheltered manure. Now, suppose these sheds will shelter 40 loads of manure, and it is worth fifty cents per load, and its value is increased one half by being protected, and we have \$20 saved in manure, in addition to the amount saved in beef.

Again: Suppose the stock consists of ten cows, and that, by such an amount of lumber in comfortable sheds, fifty lbs. per cow may be saved during the winter, which makes five hundred lbs. This is a low estimate. When the season for turning to grass arrives, these ten cows, which have retained fifty lbs. each of fat and flesh will make fifty lbs. of butter more, during the season, than if they had lost fifty lbs. of fat and flesh, which must be supplied before they would give the greatest flow of milk. Here we have, then, five hundred lbs. of butter, which, at 20 cents per lb., will bring \$100 in clean cash.

A great many farmers plead that they have not the money to expend for lumber for sheds, and they hate to be in debt. It is always very desirable to keep out of debt, but when we have the most indomitable assurance than an investment will return double, and even quadruple interest in less than one year—as in the instances mentioned—no one should hesitate for a moment to provide for his animals that comfort which they so much need during the rigors of a cold winter.

S. EDWARDS TODD.

Lake Ridge, Tompkins Co. N. Y.

[Wool Grower.]

BARN-YARD MANURE.

When a plant is burned, the four *organic* elements, oxygen, hydrogen, nitrogen and carbon are driven off into the air, while the ten inorganic elements are left as ashes. Consumption by an animal has been frequently compared to this burning process, and to a certain extent the analogy holds true. It has been supposed, by some at least, that the organic elements of the food passed into the atmosphere in the form of breath, perspiration, &c., while the inorganic, or ashes, were voided in the solid excrements. This, however, is true only in part, and gives but a faint idea of the actual process of nutrition. It is true that one-half the organic matter of the food is given off by respiration, &c., but it is not an integral half. None of the nitrogen of the food is exhaled in the breath, or given off through the pores of the skin. It is only the digestible hydrogen and carbon of the food which are burned in the lungs and thrown off from the body in the form of water and carbonic acid. The greater part of the nitrogen of the food is found in the urine, while the undigested carbon compounds, (woody fibre, &c.) are voided, in conjunction with the inorganic elements, in the dung.

Leaving out of the question mechanical action, the composition of the food affords a true criterion of the composition and value of the manure. If clover ploughed in would be good manure, clover passed through the body of an animal would be equally good; if straw ploughed in is of little value, manure made by animals eating nothing but straw will be no better.—Hog and horse manures are known to be of more value than cow and sheep manures. They are so because hogs and horses live on richer food, and for no other reason. A cow or a sheep would make as good manure as hogs or horses if both were fed on the same food and other things were equal.

It is important to ascertain, therefore, what foods make the richest manure.—There are many conflicting opinions on this point, which our space will not allow us to examine. *We believe that the value of manure will be in proportion to the amount of nitrogen the food contains.*—There cannot be a rational doubt on this point. It is well known that clover is of

more value as manure than straw; this is because clover contains more nitrogen than straw. Practical farmers know that manure made by animals eating oil cake and peas is worth more than that made by animals eating nothing but turnips or hay, and this is because oil cake and peas contain such a large quantity of nitrogen—Blood, woolen rags, horn shavings, leather, hair and the carcasses of animals, are all known to be the best of fertilizers. They are so, simply because they contain such a large amount of nitrogen. In fact, we know of no substance containing much nitrogen, but what practical farmers consider, without knowing why, of great value as manure. The value of Peruvian guano is always estimated by the quantity of nitrogen it contains. The more intelligent dealers, before purchasing, always have the per centage of nitrogen determined in various cargoes, and buy that which contains the most. On this point the late Prof. Norton says that during his stay in Edinburgh, samples from more than 500 cargoes of guano were analyzed in the laboratory of Prof. Johnston, and were sold by his analyses, fluctuating in price as they indicated more or less nitrogen.—“Had there been any mistake,” he justly observes, “in this method of estimating value, experience would soon have detected it.”

As nitrogen is such an important element of fertility, we may be justified in giving some account of its action and characteristics. In its elementary state, it is always a gas. It forms 78 per cent. of atmospheric air, acting simply as a dilutant to oxygen. It is inhaled and respired from the lungs without the least change, and is not taken up by plants in its elementary state. M. Ville, indeed has published the results of careful experiments which indicate that plants have the power of taking up nitrogen, but the bulk of the evidence on this point is against him. It is an indispensable ingredient in all animal and vegetable life. Nothing that possesses organization or vitality, whether animal or vegetable, can be formed without it.

As plants or animals cannot take their nitrogen *as such*, from earth or air, it follows that it must undergo some chemical change previous to its entrance into organic life. This change is the conversion of unorganized nitrogen into ammonia.—

This takes place under certain well known circumstances, but the operation is so slow and so limited, that it must have taken indefinite ages to form all the ammonia and products resulting from it at present existing on the earth—unless ammonia *was created as such*. But, whether this was or was not the case, is of little importance. We know that nitrogen is organized, and that by the decay of all organic bodies their nitrogen is converted into ammonia, and that this ammonia is taken up by plants and again becomes organized nitrogen.

Ammonia is always formed by the ultimate decay or combustion of a nitrogenous substance, 14 pounds of nitrogen uniting with 3 pounds of hydrogen, to form 17 pounds of ammonia. It is a gas much lighter than the air, and rapidly evaporates when exposed in a free state. It is an alkali similar in many respects to potash and soda, forming fixed salts with all the mineral and with most of the organic acids, and has a very strong affinity for them. It is rapidly absorbed by water, for which it has a great affinity, though no combination takes place. As formed from decaying substances it always unites with carbonic acid, forming the *volatile* salt, carbonate of ammonia. It is this salt which all have observed on entering an ill ventilated stable after it has been closed for some time. It is what ladies sometimes endeavor to keep themselves awake with in church, stimulating the nostrils when there is little in the sermon to stimulate the brain. If you doubt that the nice clean hartshorn you have purchased of the druggist is the same as that given off from all decaying animal and vegetable substances, get a little moist guano, urine, blood, or any other animal matter, and mix it with ashes or lime, allowing it to stand a short time in a covered vessel, and then see if you can detect the least difference in the smell of the two gases—the one purchased in the city, and the one of domestic manufacture.

Carbonate of ammonia contains all the four organic elements which compose such a large proportion (generally from 90 to 98 per cent.) of all animal and vegetable substances; and it is in this shape that nitrogen is taken up by the plant and organized into food for animals. This is a strong argument, though we possess a still

stronger one, for making and saving as much ammonia on the farm as possible.— We know of no modern agricultural improvement, which experience has confirmed as giving larger crops, but what directly or indirectly, brings more ammonia on to the farm or renders that already there more available as food for plants.

As an aid to the farmer who desires to improve his manure heap, we have made up from various reliable sources, the following table, showing the per centage of nitrogen, &c., in various substances used as food and as manure. It is worthy the most careful study and consideration :

	Water.	Dry matter.	Nitrogen in natural state.	Nitrogen in dry matter.
Barley straw,	11.0	89.0	0.23	0.26
Oat do	21.0	79.0	0.28	0.36
Rye do	14.0	86.0	0.30	0.35
Wheat do	18.0	82.0	0.33	0.40
Buckwheat straw,	11.6	88.4	0.48	0.54
English meadow hay,	11.0	89.0	1.15	1.28
Red clover hay,	12.7	87.3	1.83	2.10
Pea straw,	8.5	94.5	1.79	1.95
Carrots,	87.6	12.4	0.30	2.40
Potatoes,	74.0	25.0	0.39	1.49
Mangel wurzel,	87.0	13.0	0.29	2.27
Ruta бага,	88.6	11.4	0.21	1.87
Barley,	46.0	84.0	1.60	1.90
Malt,	7.0	93.0	1.60	1.72
Wheat,	16.0	84.0	1.80	2.14
Oats,	16.0	84.0	2.00	2.38
Indian corn,	18.0	82.0	1.64	2.00
Malt-dust,	7.0	93.0	4.00	4.08
Malt-grains,	6.0	94.0	4.51	4.90
Linseed,	12.0	88.0	3.75	4.26
Beans, peas or tares,	16.0	84.0	4.00	4.76
American oil cake,	11.0	88.4	5.04	5.71

Hair, feathers, leather, wooden rags, horn shavings, dry blood, dry flesh, and fish, from 15 to 17 per cent. of nitrogen.

It will be seen that the straw of barley is the poorest, and that of wheat the richest of all cereals. Pea straw is worth five times as much as wheat straw for manure. Clover hay is worth nearly as much again as English meadow hay. We have no analyses of corn stalks that are satisfactory, and therefore have not given them in the table. The analyses which we have indicate that the dry stalk contains about 1.2 per cent. of nitrogen, and the dry leaves $2\frac{1}{2}$ per cent., showing them to be of high comparative value. Of the gramineous grains, barely is the poorest in

nitrogen, Indian corn a little better, and oats the richest. Flax seed contains a large per centage, peas and beans still higher, and oil cake the highest of all vegetable substances used for food. Hair, feathers, &c., are most valuable fertilizers, equal in nitrogen to the very best Peruvian guano, and much better than what is often sold as such for \$60 per ton. They would be quite equal to good Peruvian guano, but that their nitrogen is in a far less available condition.

In making and preserving barn-yard manure, then, the primary object should be to get as much ammonia as possible; and, as we have before stated, the composition of the food is the true index to the composition of the manure. The more nitrogen the food contains, the more ammonia, or compounds which will ultimately form ammonia, will the manure contain; and therefore, other things being equal, the more profitable will it be for feeding purposes; for in all countries having easy access to the great markets of the world, no farmer can afford to feed cattle unless the manure be accounted of some value.

The first object of the farmer in making manure, will be to give his animals those kinds of food which, other things being equal, contain the most nitrogen. The next most important point is, how to treat the manure so as to retain all the valuable elements it contains, and at the same time reduce its bulk as much as possible by fermentation. The last consideration is seldom mentioned by theoretical writers, but it must not be forgotten. It is intimately connected with the expense and profit attending the application of manure. If, as we assert, the carbon of the manure is of little value on a wheat farm, and its water of no value; and if carbon and water compose four-fifths of all fermented barn-yard manure, as we know they do, it cannot but be to our advantage to reduce their quantity, if it can be done without loss to the valuable portions of the manure.

The most valuable part of the excrements of animals is the liquid. More loss is sustained by allowing this to run to waste than in any other one thing. Rapid fermentation in a loose heap is another source of loss. Allowing the eaves water to run on and leach out the soluble portion of the manure is another common malpractice. These three evils every one fa

miliar with agriculture must have observed. The loss to each individual farmer by such mismanagement is great, and viewed as a national question, is most appalling.—The direct loss to the farmers themselves, in the aggregate, is immense; while the indirect loss to the country is positively inestimable. To prevent this loss, we must in the first place, save the liquid excrements. This is a problem which has puzzled the most scientific farmers of the age. The difficulty is much greater in England, where turnips, containing 90 per cent. of water, are used for stall feeding than with us. Here, if the buildings are all spouted, the greater part of the liquid of the animals and the rain falling on the surface of the yard may be absorbed in the course of the year. To do this, the bottom of the yard should be covered with dry peat, muck, saw dust, waste straw, potato vines and numerous other absorbent substances which can be found on most farms, and which, valueless in themselves, can thus be made into enriching fertilizers. The bottom of the yard should gently slope to one point where a tank must be built.—In this, the superabundant liquid of the rainy season can be preserved, and pumped back on to the heap when it needs it.

In the second place we must keep up a gradual and slow fermentation keeping the heap as near as possible at a temperature of 90° to 100°. If horse or sheep manure be thrown up loosely, so that there is a free admission of air and moisture, rapid and most injurious decomposition takes place, with evolution of carbonate of ammonia and water. This burning process (for it is nothing less than a slow process of actual combustion,) may be allowed to go on till the heap is reduced to a comparatively worthless mass of humus and ashes. On the other hand, if hog and cow manure be thrown into a *solid* heap, little or no fermentation will take place, and the mass will remain in a raw state, unsuitable for direct application to rapid growing plants. The first object of the farmer, therefore, should be to mix these several manures together, so that the horse and sheep manure shall act as a ferment, and induce the desired decomposition in the hog and cow manure. In this way they will be beneficial to each other, and the heap by spring will be in good condition for direct application to corn, pota-

toes, &c. Sheep do not like to lie on a fermenting manure heap. They should, if possible, have a separate yard to run in at night, and the manure they make be hauled back to the common heap as often as practicable, fresh straw being supplied in its place. If necessary, sheep and cattle should run on the manure heap in order to compress it and prevent too rapid fermentation. If these conditions—spouting the buildings to prevent leaching, having a tank to save the liquid which straw and other absorbents will not retain in wet weather, and mixing the different manures together in a compact heap, so as to sustain a slow and prevent a too rapid fermentation—were complied with, the value of the manure on most farms would be doubled.

To convert the volatile *carbonate* of ammonia into the non-volatile *sulphate* of ammonia, has occupied the attention of the most profound chemists of the age. Many plans have been proposed, but none of them, so far as we are informed, are practical and economical. Sprinkling the heap with dilute sulphuric acid has been proposed. This will convert all the carbonate of ammonia existing in the heap at the time of application into a sulphate, but it will prevent fermentation and the formation of any more carbonate of ammonia. This plan, therefore, will not accomplish the object. Sulphate of iron (copperas) has been often proposed. It will answer well in a chemical sense, but not in an economical one. The copperas costs too much to make its application profitable, and the presence of the iron in the manure is injurious rather than beneficial. Superphosphate of lime, with an extra proportion of sulphuric acid, made on purpose, we have used with success. As a general thing, however, we think its use would not pay. "But," the reader exclaims, "you are forgetting sulphate of lime, (gypsum). I have seen it stated time and again, in agricultural papers, as well as in 'LIEBIG'S Agricultural Chemistry,' in 'STOCKHARDT'S Chemical Field Lectures,' in 'The Progressive Farmer,' and in every other work I have read on this subject, that plaster scattered in stables and on manure heaps, would arrest all the escaping hartshorn, and convert it into a fixed salt. Gypsum is cheap, and the application so easy that we cannot de-

sire anything better for the purpose." That is all true, except in one particular; *plaster*, UNLESS IN SOLUTION, will not convert carbonate of ammonia into the sulphate of ammonia, LIEBIG, STOCKHARDT and NASH, and the agricultural papers to the contrary notwithstanding. We are exceedingly sorry that it will not. It would be such a great advantage to the farmer. By its aid, he could reduce his whole manure heap, by fermentation, to a few wagon loads, and it would be so strong that a few bushels would be sufficient for an acre, saving an immense amount of labor and expense in hauling it to the field, &c.

"But can it be possible that such able chemists have made so great a blunder?" It is easy to account for this fact. Chemists always work with their re-agents in solution, and sulphate of lime in solution will convert carbonate of ammonia into carbonate of lime and sulphate in ammonia. Such being the case, the chemist, stung with the taunt, "Chemistry has done nothing for agriculture," asserts that he has discovered something that will be of great benefit to every practical farmer, and states that by scattering gypsum on fermenting manure, the escaping ammonia will be arrested. Learned authors embodied it in new works. The newspapers take up the assertion and scatter it broadcast over the land; so that at the present time it is as familiar as household words, and if you attempt to undeceive a person on the subject, he will take you for a young upstart, and advise you to speak a little more respectfully of the great teachers of science!

Scattering dry or moist plaster on the manure heap, then, is of little use. But if we could only dissolve it, it would be just the thing we want. Cannot this be done? It is true that something like 400 pounds of water are required to dissolve one pound of plaster, but cannot the water be used over and over again, the manure taking the sulphate of lime from the water as it is filtered through it? The water in the tank should always be kept saturated with gypsum. In this way plaster sufficient to form a considerable quantity of sulphate of ammonia might be placed in the heap without rendering the manure too wet for fermentation, inasmuch as the carbonate of lime resulting from the transformed sulphate of lime would materially assist decomposition. This method will

not only preserve all the most valuable substances of the manure, but it will enable the wheat growing farmer to drive off a great part of the valueless portion of the manure—carbon and water—and so reduce the weight and bulk of the heap, and the labor and expense of applying it to the soil. Manures managed in this way, and fermented to the extent proposed, may be used as top dressing with little, if any loss. On loamy soil, it may be drawn out in the fall—the comparatively leisure season of the farmer—and spread on the land, ready for plowing in for corn, potatoes, &c., the next spring.

To carry out successfully the plan of preparing manure which we have briefly attempted to sketch, it will be necessary to have the farm buildings arranged with this object in view. As a general thing, at present, the barn and cow house, the stables, the piggeries, and the sheep-yard, all occupy separate places, often quite a distance from each other. This ought not so to be. They should all open into, and encircle a common yard, having a southern aspect, and containing a good range of open sheds for young cattle, &c. The importance of this cannot be over estimated. As we now write, our kindling enthusiasm for agricultural improvement is nipped in the bud when we think of the miserably arranged farm buildings common throughout the length and breadth of the land. We have innumerable handsome barns with domes, venetian shutters and glass windows, which an Englishman would mistake for a dissenting chapel or a country school house, but we have very few really good, well arranged, substantial farm buildings. We do not desire to see expensive buildings, but such as are simple, plain, and substantially arranged for convenience, utility and profit. You cannot make the *most profit* on your farms, inasmuch as you cannot make good manure, the sheet anchor of all good husbandry, without them.

Another requisite for carrying out our system is—a *good wheel-barrow*. Reader, you probably have not got one. Few farmers have. Perhaps you have a common dirt barrow. This is better than nothing, certainly, but is not worthy a place in any respectable barn-yard. Do get a good one, with a large flat bottom, a high front-piece and deep side boards which can be taken off at pleasure. Then when you

clean out your stables, do not throw the litter close to the entrance, where it will lie in a loose heap, and spoil by rapid fermentation, but get your new wheelbarrow and take the litter to a distant part of the yard where it will be mixed with the litter of the pig pens, cow house and sheep fold. The advantages of such a mixture we have already explained.

The system of managing manure here imperfectly sketched is adapted rather to a wheat growing section, and for farms where a large quantity of straw is raised, and which is all used on the farm, than to the New England States, where scarcely enough straw is produced for bedding, even when the most rigid economy is practised. We have no great love for manure cellars, but where straw is scarce and muck plentiful, they have some advantages. In them, as in the open yard, the chief objects of the farmer must be to absorb all the urine, and prevent a too rapid fermentation of the dung. If a considerable number of cows and hogs are kept, and their manure is well mixed with the horse dung, the latter will be easily accomplished; and by spreading a little muck over the surface of the heap occasionally, all the ammonia can be retained; but where horse dung is loosely thrown into the cellar, it will rapidly decompose, and much ammonia will be given off. It is vain to suppose that the cellar can be kept so close as to prevent the escape of ammonia. The only way this can be accomplished is by employing the so called fixers—sulphate of lime in solution, as we have said, is the best—or by the use of absorbents, straw, muck, charcoal, &c.

We cannot resist the conviction, however, that farmers as a general rule, will not employ chemical means to retain the ammonia in manure, and we believe there is less necessity for doing so than is commonly supposed by scientific writers, if the manure heap is judiciously managed. Prof. WOLFF says: "By maintaining the manure moderately moist throughout its entire mass, a fertilizer will be produced, preserving almost entirely the original virtue of the manure, and in a form well adapted to promote the growth of crops; and this without employing chemical fixing-agents, as plaster, sulphuric acid, &c., whose application on a large scale is often too costly and troublesome. Swamp

muck, peat, brown-coal powder, or any earth rich in vegetable matter may be economically employed to assist in retaining ammonia. Whichever material be used, it should be strewed as a thin coating over the surface of the manure, from time to time during the summer; and be kept moderately moist by occasional drenchings with the contents of the cistern."

Although Prof. WOLFF thinks that "where yard manure and composts are skillfully prepared, the loss of ammonia is very slight, even without the use of fixing agents," yet he cites the experiment of Dr. KRUTZSEK to show the extent to which ammonia is given off when common liquid manure is allowed to ferment unmixed with fixing or absorbing agents. He found that the solid residue remaining after the evaporation of perfectly putrid yard liquid, gave $3\frac{1}{2}$ per cent. of ammonia, while the same liquid treated with an acid (fixer) before evaporation gave a residue which contained $12\frac{1}{2}$ per cent. of ammonia. In the Rothamsted experiments, if we recollect right, sheep urine, evaporated without acid, lost even a still greater amount of ammonia. Yet we should be careful how we apply such results to common practice. It is known that water will hold a large quantity of ammonia, and we believe the loss of "this spirit-like essence" of the farm, ever struggling to be free," from fermenting common barn-yard drainings is much less than the above figures indicate, yet it is sufficiently great to warrant the use of any cheap method of fixing it, such as the one we have suggested by the employment of sulphate of lime in solution.

We would just add that though we dwell so much on the importance of nitrogen in the manure, we do not underrate the value of the inorganic elements, which are of course indispensable to the growth of all plants. We speak more directly about nitrogen, because we think it of greatest importance, and because we know there is no way of increasing its amount on a farm, without at the same time increasing the amount of inorganic elements; and also, that there is no way of judiciously preserving and fermenting the nitrogen without at the same time preserving the inorganic elements and rendering them in a better state for assimilation by the plant. Especially is this true of the phosphates and

silicates. Nitrogen and phosphoric acid generally exist in the same ratio in most substances used for food or manure; while the solubility of the silicates is greatly increased by fermentation in the manure heap.

MR. DULANEY OF LOUDOUN'S STOCK.

The following notice of the stock of R. H. Dulaney of Loudoun, Esq., is from an appreciative friend, who has done him simple justice, but it would be unfair to the farmers, of whom Mr. Dulaney is an ornament, not to add at least an endowment from ourselves, who know him well and esteem him highly, with great fondness for stock, and a most discriminating judgment of the points of all sorts of them, he happily combines a fortune which enables him to gratify his tastes, and a liberal public spirit which prompts him to diffuse it among his countrymen by putting moderate prices on all his animals.

His superb Ram we mentioned in our notice of the notoriety of the fair as the finest sheep we had ever seen; his Berkshire hogs we think we also noticed as very conspicuous in their department; his imported heifers, though beautiful animals, were out of order from the voyage they had just made across the Atlantic, and had Mr. Dulaney been less public spirited, would not have been exhibited at all; his noble stallion, SCRIVINGTON, who is advertised in this number of the Planter, was not present because he had not sufficiently recovered from a similar backset, to show his form or paces to advantage.

This praise is not extravagant; the animals speak for themselves to every judge; and as to Mr. Dulaney, we do not see how we can commend too highly a gentleman who is striving to do all that he aims to accomplish.—ED. SO. PLANTER.

FRANK G. RUFFIN, ESQ.,

Editor Southern Planter:—Dear Sir—I have promised more than once to show my interest in the Planter, by dropping you a line for its columns, but as often have I been deterred from doing so by the conviction that I should not thereby add anything to its interest; but to-night I have just returned from a visit to my countryman, R. H. Dulaney where I have, feasted my eyes upon the splendid stock just imported by him, and think I shall

be doing a favor to the stock raisers of the country by calling, through you, their attention to this valuable addition just made by Mr. D. to the pure bred stock of the State.

We have but few men in Virginia who are able thus to bring among us the choice stock of the world, there are fewer still who are willing to incur the trouble and expense, or who have the taste and judgment necessary for such an undertaking, and I esteem it fortunate for the State, and particularly for our section of it, that Mr. Dulaney's taste inclines him to such an enterprise, and that his fortune is adequate to its indulgence.

If I had Peter Whetstone's peculiar gift in such matters, I would give you a scientific description of these animals, but I have nothing of the sort, and can only tell you in a plain way my impressions of them.

The first on the list, in point of value, a *Cleveland bay stallion*, called "Scrivington;" a truly magnificent animal. He is a deep bay, five years old, stands sixteen and a half hands high, is big enough for the plow, but with sufficient action for the saddle, and is so symmetrical in his form, that he looks but little above the average sized horse. He received the first premium for "Coaching Stallions," at the late meeting of the Royal Agricultural Society of England, and is spoken of by the MARK LANE EXPRESS, as "leaving nothing to desire in this class of horse,"—a condensation of praise which leaves nothing further to be said on the subject. He is, I think, exactly the horse we want, as he combines in an eminent degree, size, action, and beauty, and will furnish a class of horses, varying, of course, with the quality of the mare, fitted either for the waggon, the carriage, or the saddle.

The *Durhams*, or *Short-horns*, next took my eye. These are two calves, and two two-year old heifers; the former looked very much as if "their mother did'nt know they were out." They had evidently left home too soon, and stood their trip across the waters badly; but the two-year olds, compensated fully for any deficiency in their juniors, they are very large; though perfectly neat, and are decidedly the most beautiful heifers it has ever been my fortune to see. They are, also, I believe,

prize animals, and were bought for Mr. Dulaney of Jonas Webb at a tall figure.

The sheep come next in order, and consist of a Ram and twenty-three Ewes—all yearlings of the pure South Down breed; and such a lot of sheep I am sure have never been seen in the United States. The Ram is certainly the *ne plus ultra* of sheep; he is as big as a Cotswold and is a model of symmetry and beauty. He was bred by Jonas Webb, and cost in England £110—about \$550. Six of the Ewes received the first premium at the recent meeting of R. A. Society of England, and are almost as perfect as the Ram; the other Ewes are also beautiful, and would rake the first premium for that number of sheep at any show at which I was a judge.

Next come the *Berkshire hogs*, of which I will only say, they are as pretty as hogs can be. Mr. Dulaney informs me that he has satisfied himself, from observation, experience, and enquiry, that the Berkshires are superior, for our country, to any other variety of hog, and I doubt not he is correct.

In addition to these, Mr. Dulaney, has quite a number and variety of fine stock, of other importations, which I cannot now particularly notice, as I have extended this communication to a greater length than I designed; and I will, therefore, conclude by saying, that the breeders in Virginia have now, or will soon have, an opportunity to supply themselves with *pure bred stock*, and that upon terms so reasonable, as to be within almost every man's reach; for I understand Mr. Dulaney's prices are *very far* below those of the regular stock raisers; his object being, while he indulges his taste for such things, to disseminate the purest breeds of stock throughout the State.

Truly yours, N.
Loudoun Co. Va.

THE HOUSEWIFE.

HARDENING TALLOW FOR CANDLES.

"How can I harden tallow that is rather soft, so as to make hard mould candles."

In reply to the above, you suggest that alum or rosin will harden tallow. If this is all the information which you possess upon that topic, I do not wonder you ask for more light. Having had some *little* experience in working tallow, I will say that

neither of the above is useful, but both injurious to tallow—rosin particularly so; it will *not* harden tallow, and *will* soften it, strange as it may appear, and will injure the candle made from the mixture, and throw off in burning a real rosin smoke.

Tallow chandlers never use anything with tallow to harden it. Instead of adding, they extract the soft part of it, and their peculiar mode of doing the work would perhaps not be interesting, as the process could not be well adopted by families who simply make their own candles.

Tallow is said to consist of three parts; *stearine*, the hardest; *margareine*, the next hardest; and *oleine*, the limpid, called tallow oil. By taking out the tallow oil, reducing the whole weight about 25 per cent, you have a hard summer candle. By taking out then, the *margareine*, you have left the *stearine*, which when made in candles, are adamantine in character. This is done by heating, cooling, and pressing, yet it requires a skill which the uninitiated would hardly possess.

Soft tallow is from fat or stall-fed cattle, and usually too soft for summer candles, or for candles in warm rooms, and it would be far better for those having such tallow, to dispose of it to chandlers who know how to use it, and buy for themselves tallow from grass-fed or lean cattle, with a mixture of mutton tallow, if to be had.

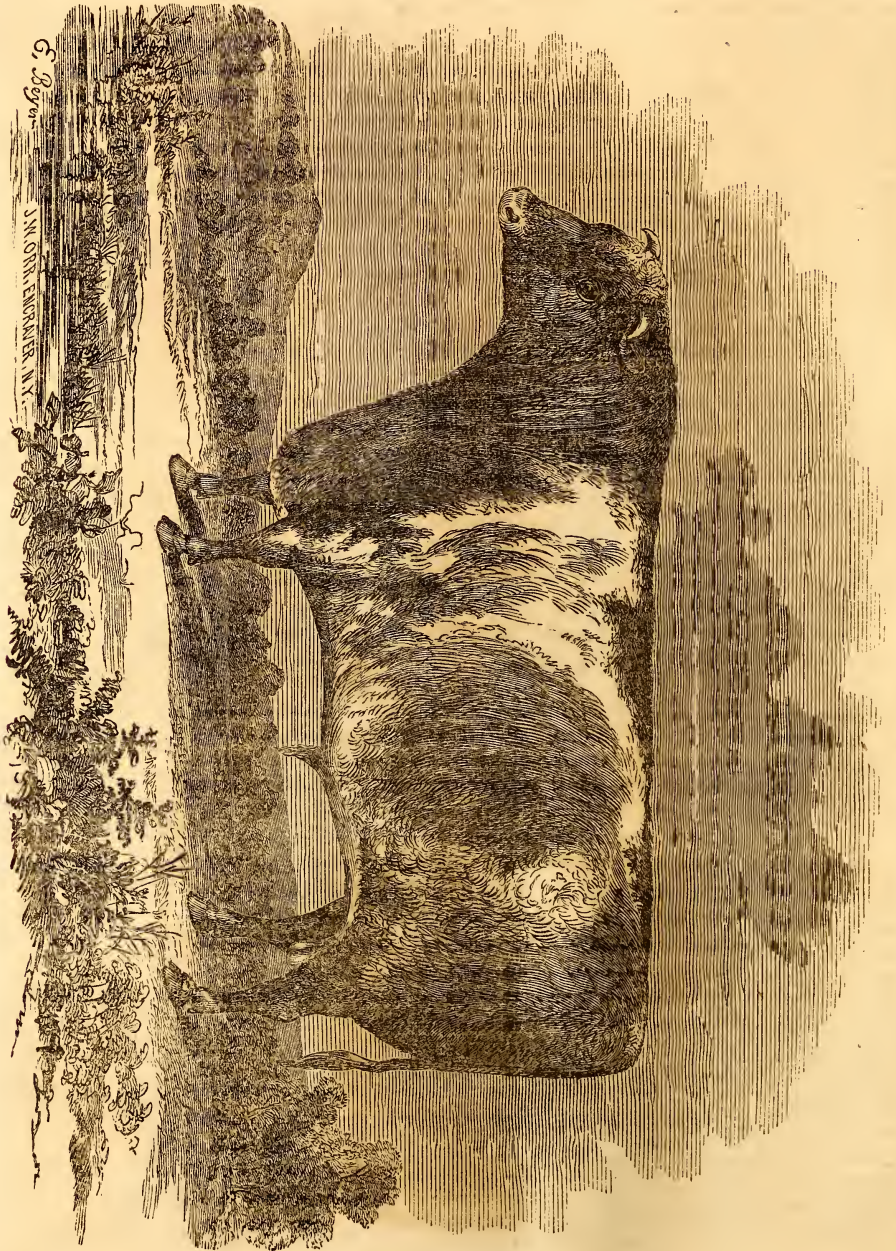
Thus, the only true way of getting hard tallow, is to disunite the oil or soft part from it; but as this duty is left for science and mechanism, and, as I presume "L. C." is not engaged in the business, except to make a few pounds for home consumption, I will state what I have used most successfully, viz: beeswax, at the rate of one of wax to ten of tallow; more, if you wish to make still harder. There is a difficulty in using too much wax. The candle will, in shrinking, ring or crack considerably. I have had them split from one end to the other. Caution is required in using wax, but it will not injure the burning.

Baberry tallow, (a vegetable product,) is a good article to mix with beef fat, but it is too scarce in this section to be obtained.

Hoping you will excuse the length of this answer to so simple a question, I am yours, &c. * — *Country Gentleman*.



For Pedigree, see page 123.



NORFOLK, No. 755, AMER. HERD BOOK.

A noted prize Short Horn Bull, the property of Mathews and Sanders, Wythe Co. Va.

PEDIGREE.

Norfolk, 755, rich roan, bred by James Rennie, Bourbon county, Ky., the property of Mathews and Sanders, Wythe Co. Va., calved

Jan. 1st, 1850; got by Ashland (11122) out of Lady Harrison, by imported bull Rover (5015), gr. dam Josephine, (bred by Mr. Whittaker and imported by the Ohio Co) by Norfolk (2377), gr. gr. dam Minna by Frederick (1060), gr. gr. gr. dam Wildair by Meteor (431), gr. gr. gr. gr. dam by Yarborough (705), gr. gr. gr. gr. gr.

dam by Styford (629) gr. gr. gr. gr. gr. dam by Hallon's bull (313).

Norfolk received the 1st premium as the best yearling, best 2 year old, and best aged bull, at the shows of the Wythe County Agricultural Society. He received the 1st premium as the best Short Horn bull, and best bull of any kind, at the show of the Union Society at Petersburg, Fall of 1855; and the 1st premium, as the best Short Horn bull, and best bull of any kind at the State show at Richmond, Fall of 1855.

MISS KIRBY AND CALF MORGIANA BY
NORFOLK 755.

Prize Short Horn Cow, the property of Alex. S. Mathews, Wythe County, Va.

PEDIGREE.

Miss Kirby, red, bred by Col. H. Capron, Laurel Factory, Md., the property of Alex. S. Mathews, Wythe Co. Va., calved Nov. 14, 1847, got by Gledhan (3900), out of imported Ellen Kirby by Rockingham (2550), gr. dam imported Miss Kirby by Don Juan (1923), gr. gr. dam by Shylock (2622) gr. gr. gr. dam by Castle Howard Bull.

Miss Kirby received the 1st premium as the best one year old Short Horn heifer at the Maryland State Show, fall of '49, and 1st premium as best two year old and best aged cow at the show of the Wythe County Society. She also received the 1st premium as the best Short Horn Cow and best cow of any kind at the State Show at Richmond, fall of 1855.

TOP GRAFTING OLD ORCHARDS.

Col. Hodge said that if the trees were old, far advanced in life, and had commenced decay, he would by all means cut them down. But if they were young and vigorous, he would graft them. A friend of his had an orchard—some of the trees were old and mossy, many of them had commenced decaying—the fruit was gnarly and poor. An itinerant grafter came and grafted them, using his own grafts, and setting many of them twenty feet above the ground. In a few years, when the grafts grew, his trees looked so bad and ill shapen that he became discouraged and cut them down. He dug up the stumps, thoroughly broke up the ground, manured it, and planted out a young orchard, and in a very few years obtained a fine orchard of handsome trees. In 1848, a person in his neighborhood planted one hundred apple trees; a year ago last fall, he picked from the orchard one hundred and twenty-seven barrels. Some of the Baldwin trees yielded three

barrels to the tree. The orchard, however, received first rate treatment.

Luther Barber, of East Bloomfield, said he was a nurseryman and liked to sell young trees, but objected to having thirty or forty years of growth lost. He had followed top grafting extensively for more than twenty years, and in that time had had a great deal of experience. Very soon after he commenced grafting, he adopted a different method from the one in general use, and his experience fully confirmed him in the belief that it was by far the best. It was to saw off the limbs of the trees low down—no matter if they were six or eight or ten inches in diameter, and then insert a row of grafts around the limb about an inch apart. This should by all means be done early in the spring, before the sap starts at all, or it will not succeed as well. He did not saw off all the top the first year, but left a portion to help sustain the tree for a year or two. Of the grafts which were put in thick, a few of them soon took the lead and made the future top of the tree. One great advantage of inserting so many is, that it keeps the whole limb alive, and does not form any dead spots on the side of the limbs.

These grafts, by getting the whole force of the tree, grew rapidly, and very soon formed a good top. He had known, in several instances, three barrels of apples to be picked from trees so grafted, in three years from grafting. He had never experienced any ill results from this method, or discovered that it injured the tree in the least. He ought to say, however, that he always used kinds which grew rapidly, in preference to the slower growing sorts, as they supplied a top much sooner. He found it always revived an old orchard to put a flourishing young top on it. He had known trees grafted in this method, to bear good crops of apples for twenty-five years past. He once saved a pear tree which had apparently been killed by the fire-blight, by sawing it off below the disease, and putting in several grafts—the tree revived and lived along time. He some times cut his stocks during the winter, and grafted them early in the spring, before the snow went off.

H. E. Hooker said, that in his father's garden, a pear tree was struck with the blight; seeing no other way of saving it,

he sawed off the trunk, some five or six inches in diameter, and inserted several Bartlett grafts, which grew and made a good top. But he would not follow the plan in apple orchards unless the trees were very thrifty. Another method is, to bud the sprouts which are thrown up around the larger limbs, which soon make good tops. The great difficulty in top grafting old trees was, that it always made more or less unsound and rotten wood where the limbs were cut off.

Col. Hodge said it was a new idea to him, cutting off large limbs. He thought that the wood would be too tender and entirely unsuitable for grafting on. Although he was not a nurseryman, he liked the plan of setting out new trees, and always intended to keep setting them out as long as he lived. The idea sometimes entertained that a nurseryman's interest was different from that of people in general, was, he thought, entirely wrong. He had yet to find a more intelligent, honorable or high-minded class than that of nurserymen.

B. Fish thought that there could be no general rule for grafting old trees—if they were young, and had been properly pruned there would be no difficulty; if they were old and diseased, he would not do it. There was one other consideration,—after the first three or four years, the young trees were growing better each year, while the old trees were growing worse continually.

P. Barry thought that the method explained by L. Barber had a great deal of common sense and reason to recommend it, and was the best explanation of the *rationale* of grafting old orchards that he had ever heard. But still he could not advise persons to graft old trees after they had commenced declining. Perhaps for the first twenty years it would be a good plan.

L. Barber said that in general the persons for whom he grafted, cultivated the ground for a few years afterwards. He had never experienced any particular injury from the decay of the large limb which he cut off, and had never known a tree to die in consequence. In these perilous times from grubs and mice, he thought it a good plan to save the old trees.—*Country Gentleman*.

HARROWING AND DRESSING WHEAT IN SPRING.

As soon as the ground is dry enough to admit a team to pass over it and not treading it up, sow to each acre four quarts of clean clover seed; then with a pair of horses and a thirty-tooth harrow, go over it twice in a place; after which prepare the following composition for each acre: three bushels of good wood ashes, one of plaster or gypsum, and one of fine salt, and apply it as fast as you go over with the harrow. The five bushels to the acre, all sown, will not cost over one dollar, and, on the average of seasons, will give five bushels of wheat to the acre more than land not so dressed; and the clover will take much better, so that the following year the clover will yield a third more on the same ground. Let this be the course for ten years, and whoever tries it will not complain of the lands failing in wheat.—*N. Y. Chronicle*.

IMPORTANT, IF TRUE.

To secure cattle from male or female progency at will.—According to an article in the Annals of the Luxemburg Agricultural Society, communicated by a Belgian farmer, a heifer calf is invariably produced when the cow is put to bull before milking, and a male calf when the cow is put to bull just after she has been thoroughly milked. The author of this statement claims to have proved its accuracy by four years experience, and asserts that the plan has succeeded beyond all expectation.—Cows, which previously had borne only male calves, and that for four or five years, gave heifer calves by the above treatment. Give it a trial. [Country Gentleman.]

This has long been stated by Mr. French, of Braintree, in this state, who raises some of the finest cattle among us, and who is a careful observer of this and similar phenomena. [New England Farmer.]

The above has been "going the rounds" for some time. There are more mysteries in regard to the origin of sex than that philosophy explains. The Belgian farmer had proved the idea by four years experience! If he had gone on four years more he would probably have found that he knew nothing about it. As to the testimony of Mr. French, he informed us a short time since, that his later experience had completely upset all his previous conclusions on the subject. The notion is not of modern origin. We knew the practice "long time ago," and it was even then proved to amount to nothing. [Eds. Boston Cultivator.]



THE SOUTHERN PLANTER.

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Two Dollars and Fifty Cents per annum, or Two Dollars *only*, if paid in *ADVANCE*.

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All Payments to the Southern Planter will be acknowledged in the first paper issued after the same shall have been received.

All money remitted to us will be considered at our risk *only* when the letter containing the same shall have been registered. This rule is adopted not for our protection, but that of our correspondents; and we wish it distinctly understood that we take the risk *only* when this condition is complied with.

It is indispensably necessary that subscribers remitting their Subscription, should name the Office to which their papers are sent; and those ordering a change should say from what to what post office they wish the alteration made. A strict observance of this rule will save much time to us and lose none to them besides insuring attention to their wishes.

Postmasters are requested to notify us in *writing* as the law requires, when papers are not taken from their Offices by Subscribers.

RUFFIN & AUGUST, *Proprietors*.

OFFICE: No. 153, Corner Main and Twelfth Streets.

A FRIEND OF THE RIGHT STAMP.

Since the issue of our enlarged number in January, we are in the daily receipt of the most flattering letters from our friends, as well as the most complimentary notices and expressions of good will from our brethren of the press. But (we confess our weakness) none has given us more sincere pleasure than the one now before us from which we make the following extract to prove to our friends that what we have heretofore asserted is easy of attainment if they will but interest themselves in our behalf. But to the letter.

"February 9th, 1857.

"Agreeably to promise, when in Richmond, I now

send you Forty Dollars, with twenty subscribers for the Planter. I am now endeavoring to make up another list, and I think the chance is pretty good for twenty more."

The writer of the above was in our office less than a fortnight ago, when he promised to obtain us a few subscribers. He has gone to work like a man, and in less than ten days since his return home has sent us a good list and the money in advance. He has our hearty thanks and our best wishes for his abundant success in his future efforts. Will not other of our friends follow the good example thus set?

A DESIRABLE FARM FOR SALE
IN RAPPAHANNOCK.

The subscriber wishes to sell his farm in Rappahannock Co., 3 miles from Washington, the County seat on the Sperryville and Rappahannock Turnpike, and 3 miles from the village of Sperryville. This farm adjoins the lands of H. G. Moffett, Willis Browning, Mrs. M. Buckner, Chas. Green, G. Freeman, Jno. A. Browning, and Mrs. Sarah T. Ambler, and is in a most desirable neighborhood in every respect, containing 361 or 362 acres well adapted to Corn, Wheat and Oats, as well as Grass. It is at present almost entirely in grass. Has a South Eastern exposure. Some 50 acres, well watered with the purest mountain streams. Has some excellent stone wall, a good stone dwelling house with six rooms. The out houses are indifferent. Persons wishing to purchase will address the undersigned at Sperryville, Rappahannock Co., Va.

A. M. WILLIS.

Feb 1857—4t

THORBURN'S

Wholesale Priced Lists of Vegetable, Field Tree and Flower Seeds, for 1857,

Will be mailed to Dealers enclosing a 3 cent stamp.

J. M. THORBURN & CO.

Feb. 1857.

15 John St., New York.

New Chinese Northern Sugar Cane.

(Sorghum Saccharatum)

Seeds of this invaluable plant in packets at 12½ cts. each, (by mail prepaid 25 cents,) or 75 cents per lb. in quantity.

Chufus or Earth Almonds, \$1 per 100.

Japan Peas, 50 cents a quart.

New Orange Water Melon, 25 cents per ounce.

Christiana Melon.

King Philip Corn.

Sweet German Turnip, &c., &c., with the largest and most comprehensive assortment of Vegetable, Flower and Field Seeds to be found in the United States.

Catalogues on application, if by mail, enclose a 3 cent stamp for return postage.

J. M. THORBURN & CO.

Feb. 1857.

15 John St., New York.

GARDENING FOR THE SOUTH.

By W. N. White of Athens Georgia, A most complete manual for every department of Horticulture, embracing the Vegetable Garden, the Fruit Garden, the Flower Garden, and the Pleasure Grounds, adapted particularly to the Southern States. Price \$1 25.

To be obtained of all Booksellers, or sent by us prepaid to any part of the Union on receipt of price.

C. M. SAXTON & CO.
Agricultural Book Publishers,
149 Fulton Street, New York.

Feb 1857—2t

Reese's Manipulated Guano.

Warranted to contain 8 pr. ct. Ammonia and 45 to 50 pr. ft. Phosphate of Lime, as they exist in Peruvian and Phosphatic Guano's.

The unprecedented success which has attended the introduction of the above Guano, is conclusive proof of the public appreciation and approval of the grounds upon which it is recommended, and the freedom from disguise with which it has been submitted.

What the farmer wants is a concentrated fertilizer at a reasonable cost, that may be relied upon for *uniformity of quality*, that will produce in effect on the first crop equal to Peruvian Guano, and at the same time not only prevent a depreciation of the soil but increase its permanent fertility.

That Peruvian Guano does not accomplish this desirable end, however excellent otherwise, is demonstrated by the whole history of its use.

An examination of the relative proportion in which Ammonia and Phosphate of Lime exist in Peruvian Guano, with reference to the quantity of Phosphates required for the development of crops, will satisfy any enquirer that the reason of its tendency to depreciate the soil, and its want of permanency, is occasioned by its deficiency in Phosphate of lime.

In 200 lbs. of Peruvian Guano there are at most but 60 lbs. of Phosphate of Lime.

Now upon the authority of the best Chemists of this country and Europe, this quantity is inadequate to supply the required product of an acre of wheat, while the quantity of Ammonia in two hundred pounds is abundantly proved to be double as much as needed.

The article here offered contains one-half the quantity of Ammonia, and double the quantity of Phosphate of Lime that is in Peruvian Guano, hence by the application of 200 lbs. to the acre, 100 lbs. of Phosphate of lime is supplied instead of from 50 to 60 lbs. as would be the case if Peruvian was applied. This quantity is considerably more than can be appropriated by any crop, and hence that which remains is so much contributed to the improvement of the soil.

An annual application of 200 lbs. of this guano per acre for five years, would, if a crop of wheat were taken off every year, supposing it to appropriate 60 lbs. leave in each acre of soil 200 lbs. of Phosphate of lime which all must admit would greatly add to its fertility. The same application of Peruvian guano would leave the soil no more Phosphate, than at the beginning, hence it could not be benefited.

Numerous efforts have been made to *manufacture* a fertilizer, to accomplish this end, and at the same time yield a return from the first crop equal to Peruvian guano, but they have uniformly failed for two obvious reasons.

First, because it is impossible to produce an artificial fertilizer containing Ammonia in the same variety of forms so perfectly adapted to its use, as found in Peruvian guano. Nature cannot be imitated! Secondly, because *manufactured* fertilizers cannot be relied upon for uniformity of quality; they are always liable to the variations incident to all such manufacturing processes, and hence arises the just prejudice existing among consumers of guano, against all manufactured fertilizers.

This article is not manufactured! the Ammonia and Phosphate of lime it contains, are just the same as they exist in Peruvian and Phosphatic guano.

We say it contains 8 per cent of Ammonia and from 45 to 50 per cent of Phosphate of lime, which is the product of a combination of the best Peruvian (a damaged article cannot be used) and the best Phosphatic Guano (containing in no case less than from 60 to 70

*We have recently issued a pamphlet giving a full account of the production of this article, with a clear exhibition of the principles upon which it is recommended, also containing some letters in reference to its use, which will be mailed to any address sent to the above—or to our agent.

per cent of Phosphate of lime) in the proportion of half and half, which cannot fail to yield in the aggregate the above proportions.

This combination is effected by the aid of machinery, perfectly adapted to the purpose, after the teachings of experience and labour.

By this machinery the two guanos are reduced to a uniformly fine powder, and minutely and intimately integrated, so that when applied to the soil the Ammonia of the Peruvian materially aids the solution of the Phosphates and is itself rendered more permanent.

This chemical action cannot be effected as is known to every one acquainted with the laws of chemistry, without the actual contact of minute particles, hence, the imperfect mixtures sometimes adopted, fail to answer the purpose: moreover, the guanos cannot be sufficiently reduced to admit of an intimate mixture, and if they could, a uniform combination and distribution cannot be had by any ordinary means. One of the most important results of the manipulation of this guano, is its pulverized condition, this is apparent when it is remembered that the best part of Peruvian guano are the lumps, and that it is impossible to sufficiently reduce them by means of pounding and sieving as is usually done. every lump of guano applied as large as a pea, is a comparative loss, and we believe that 8 per cent as finely pulverized in this article, is equal to 12 per cent or more, as it is usually applied. No comparison can be made between the value of this and any manufactured Phosphate, or super Phosphate, because it is not only the natural guano, but contains more of the elements than any of which we have had the fortune to see a reliable analysis.

We do not ask the public to take our assertion for this: but submit figures and invite the most rigid scrutiny, examination and analysis to prove the contrary of what we represent.

The production of this article is not intrusted to employees but is personally controlled and superintended by the undersigned.

We put this guano at a price that will justify its production, and as we intend under no circumstances whatever to allow it to depreciate from the present standard, we cannot be expected to make competition in price, with any article that may be offered under this, or other name.

Competition is said to be the life of trade, but in this particular line, it might be the reverse to the manifest detriment of the consumer.

The guano is put up in strong bags, of convenient size, each bearing the brand of John S. Reese & Co., with the name of the article, which must be the guarantee of its genuineness. Although this article is not liable to variations in quality from accident, it is susceptible of depreciation from less excusable causes, therefore, the only guarantee for the consumer is the integrity of the producer.

As this guano has been found peculiarly adapted for *Tobacco* in that it obviates the defect in that plant produced by Peruvian guano, it will doubtless prove of great value to the growers of that crop.

It has been our purpose to afford the public in this article a fertilizer that may be at all times relied upon, and to this end, we have avoided all secrecy and disguise in its production, that it may be placed above the character of *nostrum*, and the public approval of this course is manifest, in their appreciation of the article.

The theory upon which it is offered, will not be gainsaid, and the experience of our best farmers has proved it in all cases known to the undersigned, fully equal to Peruvian guano, in testimony of which, we are prepared to exhibit at our counting room, manuscript letters from some of the best farmers in this and adjoining states, the quantity applied per acre being same as Peruvian.

The guano is sold exclusively by the ton of 2000 lbs., and may be had from Messrs. McGruder's Sons, Agents for Richmond, Messrs. Peebles and White,

Agents for Petersburg, Messrs. A. K. Phillips & Co., Agents for Fredericksburg, also from authorized agents at Alexandria and Norfolk. Agencies will be established at other distant points, for the public convenience.

Terms *cash*, or approved city acceptances.

Orders, and letters of enquiry, addressed the undersigned will meet with prompt attention.

In connection with the above—possessing superior advantages for the business, the undersigned will give strict attention to the purchase and sale of *Peruvian and other Guanos*, assuring their agricultural friends, and the public, that the utmost reliance may be placed in their fidelity in furnishing *pure articles*, and on terms equally favorable with any house engaged in the trade.

JOHN S. REESE & CO.,

No. 10, Exchange Building, Baltimore.

February 1857.

IMPORTED SCRIVINGTON,

The Property of Mr. R. H. Dulany, of Welbourne Virginia.



SCRIVINGTON is a rich bay, with black legs, is five years old, stands full 16 hands 1 inch high, of strong bone, fine symmetry, superior action, quite sound and free from all natural defects. He was got by that noted horse Hambleton Hero, the property of Mr. Robinson, of Bridge Mill. His dam by Splendour, gr. d., by Grey Premier, gr. g. d. by Scrivington; she was supposed to be the best Cleveland Mare in her day, in Great Britain.

HAMBLETON HERO was got by Victory, his Dam was bred by Mr. J. Stainthorp, of West Rounton, and was got by Barnaby, Grandam by Black Legs; gr. g. d. by Trenholme; gr. g. d. by Beat's Horse; gr. gr. g. d. by Knox's Old Horse, (all Cleveland bred horses;) his dam for being the best Cleveland Mare obtained the Premium of 15 Sovereigns in 1828, at Lord Feverham's Show. Victory was got by Mr. J. Milner's Volunteer; Dam by Mr. L. Stephenson's Steam. granddam by Mr. L. Stephenson's noted Old Cleveland Horse of Cherry Burton. Barnaby was got by Golden Hero.

SPLENDOUR when 3 years old, gained the Premium at Bridlington, given by the East Riding Agricultural Society, beating Mr. Waller's Greylock, Cato, and four others. In April 1845, when 4 years old he gained the East Cumberland Agricultural Society's premium at Carlisle; in October of that year, he gained the Royal Agricultural Society's premium at Dumfries, beating eight of the crack horses in England and Scotland, two of which were thorough bred. Splendour also beat Greylock when three years old, who had defeated fifty-three of the best Cleveland Stallions in England, and was never beaten but by Splendour.

SCRIVINGTON'S Dam was bred by Mr. Taylor, of Barrow Mill, and when 5 years old, gained the Prize at Penrith in 1852, and their off-spring gained the most prizes in succession at Carlisle and Penrith, of any Cleveland breed in England.

Scrivington will be let to mares at the residence of his owner near Upperville, and at Col. R. S. Wright, Wheatland Loudon Co., at thirty dollars the season or fifty dollars to insure. Pasturage, &c. at usual rates Season commences 25th of March.

February 1857.—3t

S. McGRUDER'S SONS,

SOLE AGENT IN RICHMOND, FOR

REESE'S MANIPULATED GUANO.

AND

DeBurg's Superphosphate of Lime.

February 1857.

P. HORTON KEACH,

No. 91, Main Street, Richmond,



Agent for the sale of Messrs. HUNT & WEBSTER'S improved

“Family Sewing Machines.”

Also, manufacturer and dealer in Ladies dress Trimmings, Hosiery, Gloves, Yarns, Wors-ted, Fancy Goods, &c.

Also, manufacturer of B NERS, FLAGS and REGALIA of every description.

N. B.—Instruction given gratis to purchasers of Sewing Machines. Feb. 1857.

Valuable Farm for Sale.

BRUNSWICK Farm, containing upwards of 800 acres, lying in Botetourt county, on Catawba Creek, four miles from Fincastle some 70 acres of which are bottom lands, as productive as any lands in the state.



The improvements consist of a comfortable frame

DWELLING-HOUSE,

with six rooms, all necessary out-houses. A large STONE STABLE and good Barns, and a

SAW AND GRIST MILL,

with water-power sufficient for the largest manufacturing purposes; a good

Apple Orchard, Gardens, and Limestone Springs in abundance.

The land is principally lime-stone, and all good tobacco, wheat and grass land. The wheat crop seeded, and every thing in the way of hay, straw and corn fodder, will be sold together at an unprecedented low price, as the owner is anxious to close his farming operations. It is offered lower than 1000 acres of the same tract without improvements has been sold for, and at a price that makes it the greatest bargain in land known in that section.

TERMS.—One-third cash, when possession is given, and the balance in one and two years, without interest.

For further particulars, address the proprietors of the Southern Planter. Feb. 1857.—tf

MITCHELL & TYLER,

DEALERS IN

Watches, Clocks, Jewelry, Silver and Plated Ware, Military and Fancy Goods.

RICHMOND, VA.

Sept 1856—1y

Ayer's Cherry Pectoral,

For the rapid Cure of Coughs, Colds, Hoarseness; Bronchitis, Whooping-Cough, Croup, Asthma and Consumption.

This remedy is offered to the community with the confidence we feel in an article which seldom fails to realize the happiest effects that can be desired. So wide is the field of its usefulness and so numerous the cases of its cures, that almost every section of the country abounds in persons, publicly known, who have been restored from alarming and even desperate diseases of the lungs, by its use. When once tried its superiority over every other medicine of its kind, is too apparent to escape observation and where its virtues are known, the public no longer hesitate what antidote to employ for the distressing and dangerous affections of the pulmonary organs, which are incident to our climate.

Nothing has called louder for the earnest enquiry of medical men, than the alarming prevalence and fatality of consumptive complaints, nor has any one class of diseases had more of their investigations and care. But as yet no adequate remedy has been provided, on which the public could depend for protection from attacks upon the respiratory organs, until the introduction of the CHERRY PECTORAL. This article is the product of a long, laborious, and I believe successful endeavor, to furnish the community with such a remedy. Of this last statement the American people are now themselves prepared to judge, and I appeal with confidence to their decision. If there is any dependence to be placed in what men of every class and station certify it has done for them, if we can trust our own senses, when we see dangerous affections of the throat and lungs yield to it, if we can depend on the assurance of intelligent Physicians, who make it their business to know, in short, if there is any reliance upon anything, then is it irrefutably proven that this medicine does relieve and does cure the class of diseases it is designed for, beyond any and all others that are known to mankind. If these be true, it cannot be too freely published, nor be too widely known. The afflicted should know it. A remedy that cures, is priceless to them. Parents should know it, their children are priceless to them. All should know it, for health can be priced to no one. Not only should it be circulated here, but everywhere, not only in this country, but in all countries. How faithfully we have acted on this conviction, is shown in the fact that already this article has made the circle of the globe. The sun never sets on its limits. No continent is without it, and but few peoples.

Prepared by J. C. AYER, Practical and Analytical Chemist, Lowell, Mass.

Sold by PURCELL, LADD & CO., and by all Druggists.

Feb 1857—3t

MORRISON'S REAPER

Is manufactured out of the best material and by the most competent workmen—in Petersburg, Virg.ia.

Persons wishing to purchase are requested to send their orders immediately, as only a limited number will be made this season. Address Dr. Thomas E. Marable Agent, Petersburg Va.

E. A. MORRISON.

☞ Southern Farmer requested to copy.

Feb 1857—1f

AGRICULTURAL LIME

Of a superior quality, in any quantity over 1000 bushels, for sale upon reasonable terms by

CHAS. B. LAOCHER & Co.

Balcony Falls,

July 1st—1f

ROCKERIDGE Co. Va.

TO COTTON PLANTERS.

The Cotton Planter's Manual, being a compilation of facts from the best authorities on the culture of cotton, its natural history, chemical analysis, trade and consumption, and embracing a history of cotton and the cotton gin. By J. A. TURNER. Price \$1.

NEW CHINESE POTATO.

(*Dioscorea Batatas*) Root's from 4 to 9 inches long at \$3 per dozen—and small seed tubers (can be sent prepared by mail) at \$1 per dozen, or \$7 per 100, with description and directions for culture.

J. M. THORBURN & CO.

15 John St., New York.

Feb. 1857.

Nearly ready—The Sugar Cane seed Gratis.

Chinese Sugar Cane, and Sugar-Making.

Its history, culture and adaptation to the soil, climate, and economy of the United States, with an account of various processes of manufacturing Sugar. Drawn from authentic sources, by CHARLES F. STANSBURY, A. M., late Commissioner at the Exhibition of the Industry of all nations, at London. Price Twenty-five Cents.

Published by C. M. SAXTON & CO., 140 Fulton-street, New York.

N. B.—To persons enclosing 25 cents and a three-cent P. O. stamp, to us, we will send the above book and Seed enough to PLANT TWO RODS SQUARE.

C. M. SAXTON & CO.,

140 Fulton-street, New-York.

Feb. 1857—1t

Peach Trees for Sale.

A choice selection of kinds, both for the Garden and the Orchard, of the most beautiful growth, worked from specimen bearing trees at \$60 per 1,000—Also a general assortment of other trees and plants low. Planting done in the neatest manner by

EDWIN ALLEN, Nurseries,

Nov 1856.

15 New Brunswick, New Jersey.

FALL TRADE—1856.

To Planters and Farmers.

THOMAS D. QUARLES,

No. 229, Broad St.,

Would call attention to his large and varied stock of heavy Woollen Goods, Blankets, Kerseys, Satinets, Linseys, Oznaburgs, Bleached and Brown Domestics. Also to his stock of house furnishing goods generally. By the 15th of September, his assortment of Staple and Fancy Goods, will be complete in all departments—to which will be added Carpets, Rugs, &c.

Sept. 1856.

THE VIRGINIA FIRE AND MARINE INSURANCE COMPANY.

CAPITAL \$200,000.

Office No. 131 Main St., next East of the Dispatch Newspaper Office, Richmond, Va.

Chartered in the year 1832.

HAS now been in operation about twenty-five years, and has paid over (\$1,000,000) ONE MILLION DOLLARS for losses.

Farmers and others in Town or Country wishing their Dwellings, Barns and other Buildings or their contents insured against FIRE or their shipments insured against WATER RISKS can be safely protected in this long tried and responsible company on fair terms without charge for Policy. All necessary information promptly furnished. Address either of the undersigned. THOS. M. ALFRIEND, Pres't.

W. L. COWARDIN, Sec'y.

Aug '56—1y

LIST OF PAYMENTS

From January 1, to February 4, inclusive.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

Wm Henderson, July 1857	1 00	Thos Doswell, July 1856	8 75	W Holladay, do	2 00
Dr J W Rice, April do	3 00	Rev T H McGuire, Ap 1858	5 00	A L Modesitt, July 1856	3 75
Dr E Moss, Jan do	3 12	R A Barnes, Feb 1857	3 00	Geo W Reedy, Jan 1858	2 00
P C Massie, July 1858	5 00	R B Burruss, July 1857	1 00	R Cauthorn, July 1857	1 00
Jas M Wood, Jan do	5 00	R M Graves, Jan do	1 00	J J Scott, Jan 1857	1 00
Mrs E L Terrill, July 1857	1 00	J Ruffner, do	2 50	H B Hunter, Apr 1857	1 00
P G Argabrite, April do	1 25	Jno Glenn, Jan 1858	2 00	B F Piggott, July 1857	1 00
Chas McKee, Oct 1858	5 00	Thos R Marshall, July 1858	5 00	J F McGeorge, Jan 1857	1 25
T Shumate, Jan do	5 00	Wm H Campbell, July 1857	2 00	W L Billups, July 1857	1 00
A W Quarrier, July 1858	5 00	Wm D Mansfield, do	1 00	Jno Gassell, Jan 1857	3 00
R B Bolling, Jan 1857	2 50	Wm Kinney Jan 1857	2 00	Wm T Daniel, July 1858	1 00
S W Lackland, 15 Mar 1857	1 00	N M Osborne, July 1857	1 00	R J Gaines, Jan do	2 00
S M Baker, July 1857	1 50	Dr R Harrison, do	1 00	J G Fulton, July 1856	4 79
W Gwatney, July 1857	1 00	Geo Calvert, Jan 1857	1 35	J Perkins, Jr, July 1857	1 00
J N Legrand, Jan 1857	2 50	W M Watkins, May 1857	1 00	B V Johnson, July 1856	5 00
W Cardwell, July 1857	3 00	Y Taylor, Jan 1858	2 50	W G Maury, Jan 1858	3 00
Wm Newman, Jan 1857	5 00	N Edmunds, July 1857	2 25	A H Drewry, do	2 00
Jas H Cox, Jan 1858	5 00	J G Turpin, Jan 1858	3 25	D S Johnston, 15 May 57	75
Wm Worsham, July 1857	1 00	Ro Guy, May 1857	1 00	S T Patterson, July 1857	1 00
D X Branch, July 1856	10 63	A W Smith, Dec 1855	5 00	Jas R Gates, Jan 1858	2 00
C H Hamblin, July 1856	13 12	E Fernevhough, July 1856	3 50	W T Blair, Jan 1858	2 00
S D Watkins, July 1857	1 00	Thos S King, July 1858	5 00	E J Gresham, do	2 00
C Q Goodwin, Jan 1857	1 25	Dr C Minor, July 1857	2 50	Wm M Woods, July 1858	5 00
Dr W T Maclin, Jan 1858	5 00	Dr L Minor, Jan 1858	2 00	Geo H Damron, June 1858	5 00
W D Norvell, do	5 00	L Minor, do	2 00	H C Kyle, Jan 1858	2 00
M Wallace, July 1857	1 00	Jno Tabb, do	1 00	F M Turberville, July 1858	2 00
W A Bowen, 15 Mar 1858	5 00	Dr Jno P Tabb, do	2 00	F B Welton, July 1857	1 00
J C Denty, Jan 1857	2 50	Jno W Kirkland, July 1856	14 37	C J Thompson, Feb 1857	75
R V Gaines, July 1857	2 00	C B Fogg, do	2 00	B F Graves, Jan 1858	2 00
F Shackelford, Jan 1857	2 50	Dr N T Green, Jan 1858	3 00	Jno Morton, Jan 1857	1 00
J Whitehead, July 1857	1 00	Jno W Paxton, do	2 00	W W McGehee, Jan 1858	3 00
H M Hutcheson, July 1857	1 00	H A Allen, do	3 00	G Moore, July 1857	1 00
Jas B Newcan Nov 1857	1 00	Wm G Coleman, Mar 1856	1 25	Wm N Ragland, Jan 1858	5 00
E T Jeffress, July 1857	1 00	Geo H Matthews, Dec 1856	2 50	Wm H Clarke do	2 00
P Hairston, Jr do	1 00	A H Raney, Apr 1856	1 25	J A Padgett, Jan 1857	1 25
Judge Field, do	1 00	B W Richardson, Jan 1858	2 00	Thos B Jopling, do	1 25
B O L Howell, Jan 1858	5 00	Jos H Shelton, July 1857	5 00	A Fuqua, July 1857	1 00
E O Fitzgerald, July 1857	2 00	Danl Hatcher, Jan 1858	2 00	C R Boulware, Jan 1858	2 00
Wm Townes, Apr 1858	5 00	Dr E Watson, May 1859	5 00	N King, do	2 00
J C Hughes, Jan 1857	1 25	D Shelton, July 1856	2 50	P O Lipscomb, do	1 00
Geo W Daniel, July 1857	2 00	Ro A Calvert, Jan 1857	2 00	J M Tapscott, July 1856	4 79
McLaughlin & Carrier, Jan 57	1 25	F T Brown, July 1857	1 00	Alex Morris, July 1858	5 00
Wm A Bibb, July 1856	5 00	Pride Jones, July 1858	5 00	B Wilkes, Jan 1859	5 00
S D Brown, Jan 1857	1 00	Jno D Moon, Sr, July 1856	4 37	Geo Grounds, Jan 1857	1 25
Saml Wilson,		G Tarry, July 1857	1 00	Jno Graves, July 1857	1 00
H B Jones,		T W Merriwether, Jan 1858	2 00	T G Coleman, Dec 1858	6 00
Zach Johnston,		T J Williams, July 1857	1 00	Thos W Roberts, Jan 1858	5 00
Jas J McBride,		Wm B Randolph, Jan 1858	2 00	Mrs A M Moore, July 1857	1 00
Jos W Culton,	July 57	H B Hudnall, Jan 1857	62	Geo Bouton, Jan 1858	2 50
G W Whitmore,		C H Robertson, July 1856	4 37	C P Moncure, Jan 1860	2 50
Wm Stuart,		John Nicholls, Jan 1858	5 00	W R Cocke, July 1857	1 00
Geo W Houston,		Wm H Brander, do	2 00	J T Anderson, Jan 1858	2 00
J W Goss, July 1857	1 50	R O Morris, do	3 00	Thos Leigh do	3 00
D N Carter, May 1857	1 00	Dr J M Garnett do	2 00	Thos W Sydnor, do	2 00
Dr D G Smith, July 1857	1 00	R M Garnett, do	2 00	E Sydnor, do	3 00
J J Ambler, do	1 00	James Poage, July 1856	4 77	O M Crutchfield, do	2 00
A S Matthews, Oct 1857	2 00	Wm Graves do	5 00	A Plumer, do	2 00
M T Moseley, Jan 1857	2 50	Jno D Alexander, July 1857	3 50	A D Alston, do	2 00
W F Wright, do	3 50	F P Spotts, Nov 1857	5 00	W F Bentley, do	2 00
Wm C Knight, July 1857	2 00	Dr C C Cocke, Jan 1858	1 00	J Overyb, Feb 1857	4 17
Mrs W A Cocke, do	3 00	Geo L Bagley, July 1858	5 00	Wm Fretwell, do	1 15
B J Worsham, do	1 00	S P Ryland, Jan 1858	2 00	Saml D Wood, Jan 1857	2 50
Geo S Smith Apr 1857	3 00	Jas G White, do	2 00	Jas Pollard, Jan 1858	2 00
Jas Arnold, July 1857	1 00	Ro T Hubbard, do	2 00	Wm C Scott, Jan 1860	6 00
E Houser, Jan 1857	1 25	Capt L Nelson, do	2 00	J L Davis, Jan 1858	2 00
W W Gilmer, July 1858	5 00	Rev E Boyden, July 1857	1 00	W H Davis, Jan 1857	1 25
Thos F Knox, Jan 1857	2 50	Robt J Davis, Jan'y 1858	2 00	B W Bellamy, July 1857	1 00
L Ellis, April 1857	1 25	D B Harris, do	2 00	S Patrick, Jan 1858	1 00
H O Gill, Jan 1857	1 25	Jos Rennie, do	2 00	Jno Taylor, Jr, July 1856	6 87
P Harrison July 1857	1 00	J Newman, do	4 00	Jas L Frazer, Jan 1858	2 00
J W Moorman	1 00	Saml F Harwood, do	2 42	Jos Steele, July 1856	3 85
J L Carr, Apr 1859	5 00	T W T Fauntleroy, Jan 58	2 00	W C Meredith, Jan 1858	6 75

SOUTHERN FEMALE INSTITUTE. RICHMOND, VA.

THE Principals of the Southern Female Institute, with this announcement of its 7th session, tender their thanks to the Public for the liberal and increasing patronage they have received at its hands.

As this Institution had its origin in individual enterprise and has been fostered neither by aid from the State, nor by denominational influence, it is with pride that they point to the appended list of patrons, believing as they do that it evinces the estimation in which their labours in the cause of female education are held by men of eminence and high character.

The Principals are Virginians, and were educated in Va. They selected teaching for a Profession and have devoted themselves earnestly to it for a number of years in their native state. Relying upon the support of the Southern people they established, six years ago, this Institution, Southern in every feature and in all its teachings. No expense has been spared to make it worthy of patronage, and they hope to be supported in the effort to make the South independent of Northern schools and teachers.

The Boarding Department will hereafter be under the immediate and sole control of D. Lee Powell who has taken a large new house on the South-East corner of 1st and Franklin Streets, for the purpose of accommodating a number of young ladies as Boarders.

The Principals are determined that the opportunities offered for acquiring a thorough knowledge of the French and other modern Languages in their school, shall be equal to those of any institution in the country. One or more Parisian ladies will reside in the family of Mr. Powell, who will be required to converse habitually in French with the Boarders.

The most experienced and accomplished teachers of music, vocal and instrumental, in the city will be employed, and every effort will be made to secure improvement in this valuable accomplishment. It will be the duty of one of the teachers to see that the music scholars practice regularly and *properly*.

TERMS.

Board for 9 mos., washing and lights extra.....	\$200.00	Preparatory Department	\$40
Music on Piano, Harp or Guitar at Professors		Modern Languages in classes each.....	\$20
charges, Tuition in English.....	\$50	Drawing and Painting each from	\$20 to \$50
Use of Piano per month.			

We beg leave to refer to the following list of patrons who have now or have had daughters in the Institution. His Excellency, Henry A. Wise, Gov. of Va.

Lieut. M. F. Maury, Nat. Observatory, N. Beverley Tucker, Thomas Green, Rev. D. S. Doggett, *Washington, D. C.*

Dr. Beverley R. Welford, A. A. Morson, Esq., Conway Robinson, James Lyons, Joseph R. Anderson, P. R. Grattan, Rev. Ch. H. Read, Rev. Geo. Woodbridge, Hon. A. R. Holladay, Col. Geo. W. Munford, Charles Ellett, Jr., Charles Gennett, Lewis D. Crenshaw, Wm. R. Hill, Capt. Charles Dimmock, S. J. Rutheford, Richmond, Va.

Col. H. B. Powell, Loudoun Co., Va. Revd. P. Slaughter, Warrenton. R. E. Scott, Esq. P. St. Geo. Cocke, Powhatan Co., Va. Richard Baylor, Essex, Wm. H. Clark, Halifax. J. R. Edmunds, Mrs. I. R. Harrison, Lower Brandon, Va. Hon. Geo. H. Lee, Clarkshurg, Va. Thomas B. Barton, Esq., Thomas F. Knox, Wm. H. White, Fredericksburg, Va. Dr. A. H. Mason, Falmouth. Dr. Wm. Cochrane, Middleburg, Loudon, Va. Dr. H. A. Buttolph, Trenton, New Jersey.

For further information, apply to Principals.

D. LEE POWELL. }
R. J. MORRISON, }

Richmond, June 1, 1856.—tf

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The subscriber continues to manufacture the above at his Bone Mill near the City, the quality is fully equal to any manufactured out of the State, his price is \$40 per ton. For topdressing this will be found invaluable, and during the winter is the best time to apply it. Those in want can always be supplied upon one week's notice.

Jan 1857.

R. R. DUVAL.

AGRICULTURAL REGISTRY

AND

EXCHANGE OFFICE,

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Through the medium of such an agency persons who wish to buy or sell anything, can by the payment of a small registration fee, have access to the Register, to at once thrown into communication with the opposite party, and thus be enabled to effect a speedy sale or purchase at a small cost.

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March 1856—ly