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THE SOUTHERN PLANTER,

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

VOL. XI.

RICHMOND, JULY, 1851.

No. 7.

FRANK: G. RUFFIN, EDITOR.

P. D. BERNARD, PROPRIETOR.

TO THE PATRONS OF THE PLANTER.

FRANK: G. RUFFIN, Esq. of Albemarle, with this number, assumes the editorial conduct of the Planter. The Proprietor, being convinced that a person who could speak from observation and experience upon the subjects that might come before him, was the best qualified to conduct an agricultural journal, congratulates the readers of the Planter that he has secured the services of one so eminently fitted in these respects for the position. Mr. R. is a practical farmer, and well known as one of the most successful tillers of the soil in the State, and will be able to bring a large amount of practical knowledge to the discharge of his duties.

The Proprietor contemplates some important improvements, if the agricultural interest will second him by their aid—and he hopes, with the valuable assistance of the new editor, to make the Southern Planter a journal worthy the cordial support of the farming community of Virginia and the South.

Below is Mr. Ruffin's Address, in which he states his designs, to which the attention of the reader is particularly called.

By a recent arrangement with Mr. P. D. BERNARD, the Proprietor of the Southern Planter, I have become its Editor. I have assumed this office on very short notice, at the busiest season of the year, when corn, tobacco, hay and wheat, all call for our close and constant attention. Myself, a practical farmer, living upon and by the soil, I offer the demands of those crops upon my time as some excuse for the faults of this number of the Planter. The cause of its general defects lies, I fear, much deeper, and is to be found in the little favor that this paper has had at the hands of the farmers of Virginia. Saying nothing of my own merits or demerits, one way or the other, I may be allowed to regret that of the many

farmers in Virginia who adorn their profession, there should be few so willing to communicate to their fellows in what manner they have made it profitable, and themselves independent and respected. I know the common excuses that they have nothing to write about, and that they don't know how to write; have heard them long ago, and combatted them long before it ever occurred to me that I should have this particular interest in doing so. Such excuses are childish, unworthy the men who make them; and they know it. That which forms the business of nine-tenths of the men of Virginia must have something in it to write about. Want of capacity has nothing to do with their silence: nor, as some think, want of industry. Taken as a body, I firmly believe, and thank God that I can believe, that the farmers of the commonwealth of Virginia in these two requisites of success, compare with any people in the United States; that they have intelligence equal to any undertaking within their sphere; and an amount of energy that is not dreamed of by those who do not know with what obstacles they have to contend. A thorough Virginian myself, I honor my countrymen because I know them. But they have two great defects, *pride*, and, her daughter, *pretension*; and they are at the bottom in this matter. Unpractised in composition, as most of them are, they know that they cannot write with the ease and melliflence of professed authors, and fear that others will discover it and deride them. They forget that strength, not grace, should characterize the farmer, that plainness and directness form the groundwork of his whole character, and that polish would be out of place in writings which should exhibit only manly vigor. In these qualities they abound: and these, let me say, are all that the public want at their hands. Plain facts plainly narrated, and speculations and theories clearly stated, are conditions

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within the reach of every clear-headed man, and will fill the requirements of the community, as they should the aspirations of the contributor. The name of John Taylor, of Caroline, stands high on the roll of the eminent farmers of Virginia; no one disputes his fame; and yet his style was "harsh and rugged," but full of matter.

I do my brethren of the plough the justice to suppose that they desire to see a *Virginia* paper which shall represent the ability and the dignity of their profession; and which shall, at the same time, set forth and satisfy the wants of Virginia agriculture; that they have very warm and decided feelings on this subject, and would, *if solicited*, cheerfully make pecuniary contributions to this end.—But I must tell them that this is not all; that we need nerves as well as sinews; and that if they individually shall not work and write for their own paper, and that voluntarily, that no one man, how great soever his ability, can keep it up *unless he makes a speculation of it*, and fleeces, whilst he instructs, his readers.

The very pride which forbids them to write should, if properly directed, induce them to do it, that they may exhibit to the world our skill and our success; the advantages of our climate, institutions, soils, natural resources, and all those things which comprise the elements of an empire; and that they may aid in dispelling the errors which prevail in many quarters as to our true condition.

Another reason of the defects of this paper is the want of public spirit among our farmers. At the North, where combination is the order of the day, and is likely, whether for weal or woe, to carry all before it, the spirit of association pervades the agricultural interest, and manifests its results in many ways, all tending to increase the products of land and the power of landlords. Its force is perfectly understood, and the use of it has enabled agriculture to keep pace with the strides of other trades and arts, and to preserve some influence in the government. But here, among the farmers of Virginia, where this principle cannot obtain the mastery for a long time, and cannot, therefore, in our own class be perverted to our injury, and where it has long been used against us by capital, and the mechanical pursuits we refuse to employ it, and endure a degree

of isolation, not only in sections, but among the individual farmers, which is any thing but favorable to agricultural advancement, whether in wealth or power. There, by means of this principle, intelligence is conveyed, through well supported farm journals, to every member of the class; who is at liberty to avail himself of it as common property. Here, for want of this means of communication, the march of improvement is slow compared with what it might be; and our knowledge of each other's habits and practices is imperfectly acquired, either from vague rumor and report, or through the medium of these same Northern journals. In like manner we get our ideas of the literature and science of agriculture, and of the improvements that are made in it, from papers which cannot know what is adapted to our condition. What wonder, then, if we are ignorant of many things which it behooves us to know? and especially that we are such strangers to each other that Loudoun and Fauquier, in an agricultural point of view, are as remote from Charlotte and Halifax as from Western New York or Northern Mississippi?

Is this right? Is it creditable to our patriotism? Is it wise in us to permit such a state of things to continue, *now that a new force is to be introduced into our political system*, and a new machinery to be put in operation, requiring that we should be prepared to resist those who in such a government always live by assaulting property.

In every State in the Union, save the very newest, are one or more agricultural papers. In the North and West we think there is not a solitary exception. In Massachusetts, where agriculture is a secondary object, and their bread and meat is imported in great quantity from other States, there are two or three agricultural papers of some years' standing. And so of every New England State except, perhaps, Rhode Island. In New York, also, there are several ably conducted papers, three of which, the *Cultivator*, the *Genesee Farmer*, and the *Working Farmer*, receive a large support, not only at home, but with us. It was only a short while ago that one of these, the *Genesee Farmer*, wrote an article on the improvement of Virginia lands for "its numerous readers in Virginia," and in the same number stated that the number of subscribers

to the paper had been nearly doubled by "the exertions of voluntary and unpaid agents;" and that the list contained "more than thirty-five thousand regular subscribers." It is true that some of these Northern papers are able, and I do not know of one that is not worth its subscription price; for I hold that any twelve numbers of this kind of paper are worth the money asked for them. I really wish to see them taken and read, because they stimulate to reflection. But I cannot help thinking that it would be money not entirely thrown away, if as much support in money and writing, (being that much in addition to the present quantity applied to such purposes,) were applied to a paper within the limits of this State, as is now spent on those without them. As it is, the paucity of its original matter is pretty fairly instanced in the present number, and we are ashamed to say that the only journal in Virginia devoted exclusively to the farming interest, has only about nineteen hundred subscribers; that of these only about twelve hundred pay up punctually, and only about sixteen hundred pay up at all.

It is obvious that a paper thus inadequately sustained can only drag on a sickly existence, and can never become what the wants of the State demand. Indeed, in that respect I am free to say that I do not think the Planter the sort of paper best calculated to promote progress in agriculture. Such a publication as the Farmers' Register, was, in my opinion, far better. It appealed to a different class of readers, to men better able, for many reasons, to introduce reforms, to overcome prejudices and correct bad habits. But its fate warns against a similar adventure now; and no effort will be made to convert this paper into any thing like that, however desirable such a change might be to the more enlightened agriculturist. But if, in future, more encouragement shall be extended to the Planter, I am authorized to say that it will be issued more frequently, or be enlarged in size, so as to correspond with its patronage. It will also be more comprehensive in its character and somewhat higher in its aim. But nothing of all this can be done now. The Proprietor's means are limited, and he is not disposed to risk them in an undertaking which may not receive more favor than the public have heretofore shown to the Southern Planter.

For myself I can only engage to do what I may conceive to be my duty as an Editor. I am not insensible to its responsibilities, nor disposed to abuse its privileges. If the prospects of the paper, and my own remuneration, mainly contingent thereon, shall justify it, I hope to be able to visit most of Virginia in person, and to become acquainted with the lands and the men who till them. And if I should fail to give satisfaction to the public there is nothing in my engagement with Mr. Bernard to prevent my withdrawing to make way for a more acceptable Editor, which, in such an event, I pledge myself to do at once.

FRANK G. RUFFIN,
Shadwell, Albemarle.

THE JOINT WORM.

It is known to a good many of our readers that a new and most destructive enemy to wheat has appeared under the above name. Many crops in Albemarle are hardly worth cutting in consequence of its attacks, and all that we have seen or heard of, except one, are badly hurt by it. In the area it has traversed, and the completeness of its devastation within it, it has no rival amongst insects in this country. The dreaded Hessian fly is nothing to it; and no atmospheric calamity can pretend to a comparison. It sweeps whole districts. Besides Albemarle, it exists in Orange, Greene, Madison, parts of Louisa and Fluvanna, and in Augusta, Rockingham and Page counties; and every where, we hear, has done great damage, and it is feared will do much more before it is checked, or destroyed.

An intelligent and observing friend has given us the following account of its appearance and habits, as far as he has been able to discover them:

"It commences its work of destruction the first warm spell in the spring, and, unlike the locust or the musquito hawk of the South, does not make its appearance suddenly, or in a few days, but continues to come from the last of March to the latter part of May. If you will examine the old wheat stubble during this period you will find them in their cells about the joint, some in the form of maggots, and others in the more advanced stage of something like a gnat, with a small, slender, black body, about one-sixth of an inch long, supplied with very delicate, transparent wings,

and having towards its hinder end two very frail and slender filaments or hairs, about one-third of an inch in length, and most fancifully turned up when it is in full life and vigor, and 'regularly in for it.' Its lower extremities are armed with a sort of proboscis, or tube, with which it pierces the stalk near a joint where a blade has put out, and through which, after this operation, it ejects its egg. This cannot be seen for sometime with the naked eye, being just the color of the plant wherein it is deposited; but after a few weeks it is discernible in the form of a minute worm, about one-sixteenth of an inch long. The wounded plant in attempting to heal itself throws out a lump or knot which forms a snug house for the little devil, and here he remains in a dormant state, growing as the wheat grows, and quietly awaiting another crop and warm spring weather, when he emerges to commence his work of devastation. In these knots there are always several worms, frequently as many as ten or more, each occupying a distinct chamber. I have been unable, after diligent search, to find any trace of this worm except in wheat and rye. I had heard that it would attack cheat, but think it a mistake. This spring the parent insects passed from my last year's stubble field through, or over, a *fine lot of cheat* without leaving a trace of their transit, and through my rye, (Multicole variety,) touching that very lightly.—I should suppose not more than one stalk in many thousands,—into the wheat, which they have so completely destroyed that it will not be worth cutting. This is all I know about the joint worm, and I have no wish for a more intimate acquaintance. I shall most assuredly cultivate no more wheat for his 'use and benefit.'

"You say, what will I do. I answer, sow more oats and rye; make large crops of tobacco, and wait until the worm is destroyed or expelled."

We hope that this account may meet the eye of some one who can throw further light upon the subject. Perhaps Dr. Gideon Smith, of Baltimore, can do it. We have heard that some such thing existed a few years since in Dutchess county, New York, compelling the farmers there to give up the culture of wheat for a few years. Our contemporary, the Albany Cultivator, can, no doubt, inform us if this be the fact, and we will thank him to do so.

The symptoms of joint worm are peculiar. Every row and then it is deposited in the joint next below the head, which shortly thereafter bends, at an angle to the balance of the stem, and lies *across* the general perpendicular.—Comparatively few are thus affected, but they are easily descried, and evidence the more

serious, though at first less palpable, damage done to the balance of the stalks. These retain their attitude, but become very much "*sadged*," as we term it, looking much worse than any fly-eaten wheat. The underling heads never rise, fill imperfectly, always too late for the balance of the crop, and many of them cannot escape from "the boot."

It is thought by some that this insect has existed here for some time, and has become conspicuous of late from accidental causes. A gentleman whose crop was among the first to suffer from it, about three years ago, says that he has known and observed it for ten years. Another has had it on his land for five years. An old man in the county of Louisa recollects to have seen or heard of it in that county many years back; and we have understood that a gentleman on the lower James says that more or less of it exists in wheat every year; that he has often seen it; but never in such force as it appears in Albemarle and other places. It takes about three years from its first general appearance to get into full blast, and its rate of annual progress is estimated at twenty miles, radiating in all directions. It is said to have extended as far down the country already as Beaver Dam creek in the county of Goochland. If it be there now the farmers in that region may calculate with some certainty upon its reappearance and increase.

We do not partake of the belief entertained by our community as to the continuance of this worm, or the damage it is destined to do. The first appearance of the chinch bug excited similar apprehensions; and eminent men indulged in speculations of famine to be produced by it. But the chinch bug now does but little harm. Independent of attacks from the general enemies of the insect tribe, and of the influence of seasons, in diminishing their numbers, every such thing, as far as naturalists have been able to ascertain, has also its specific enemy, or parasite, as in the case of the Hessian fly, for example, which keeps it within bounds. We confidently trust that this worm in like manner as it becomes diffused will do less harm, and, meeting with such impediments to its increase, will ere long resume its insignificance. Meanwhile no precautions against it should be neglected by those who

may be able to take them; and the wheat crop should not be relied upon exclusively in the infected districts. Among such precautions we would advise against sowing wheat next fall alongside of a field that has had joint worm this year. We have suffered most from it in such situations, and it was evidently diminished as it advanced into the field. We would recommend a strip of rye or oats between the two about twenty yards wide. We would also recommend the seeding of early wheat. The portion of our crop that is least injured is "Ruffin's Early Purple Straw," the earliest wheat known hereabouts, and which has measurably escaped on this farm, whilst the Blue Stem or Turkey Wheat on greatly superior land is totally ruined, and in nearly all places very seriously injured. Sow also on the best lands. Generally they are least infested, possibly from the earlier maturity of wheat on them; though some of the richest spots, as in our own fields, have fared as badly as any. In some instances it would seem that guano has saved the crop, and in others not. We have seen cases of this kind so opposite in all their features that it would be unsafe to draw or state any inference from them.

Since writing the above we have received the subjoined abstract of the proceedings on this matter of the Hole and Corner Club, No. 1, of Albemarle, at their meeting on the 14th day of June:

"Mr. F. E. G. Carr sowed two varieties of wheat, the Woodfin and Ruffin's Early Purple Straw. Guanoed on corn land. Woodfin wheat sowed first and farthest off from old stubble field—not injured materially by joint worm. Early Purple Straw joined old stubble field on two sides, and edges of it very much injured. Portion of Early Purple Straw on land not guanoed, also distant from stubble field, not injured in proportion: this was almost the very last wheat sown. A small portion of fallow, (Early Purple Straw,) not guanoed, with an acute corner running up to last year's stubble field, almost entirely ruined, *except where top-dressed with stable manure: this was the last wheat sowed.*

"J. S. Minor sowed Early Purple Straw. Wheat most injured is farthest from old stubble. All his crop corn land, unguanoed, unmanured. Injury not general through the field, but spotted about.

"Wm. H. Southall. Fallow field of thirty-five acres. Two varieties of wheat seeded, Woodfin (or Poland) and Ruffin's Early Purple Straw. No guano or manure used. Two

sides of field exposed to old stubble, the other exposed to chickens, dogs and little negroes. Two sides first mentioned, three times as much injured as the latter. Also seventy-five acres corn and tobacco land in wheat—all the corn land guanoed except one acre in centre of field. One side of this field exposed to wheat stubble, one to oat stubble, one to woods. Side next wheat stubble three times as much injured as that next oat stubble. Side next woods not as much as the first of these, but rather more than second. The acre unguanoed, in the midst of the guanoed corn land, won't yield half the seed, whilst that adjoining it will give eight to twelve bushels.

"William Garth. Wherever joint worm is worst can see where it comes from. In corners next woods very bad; also next fences, branches, thickets, and every situation calculated to harbor them. Thinks burning in February will exterminate them; that is, burn every thing which is likely to harbor them, such as stubble, fence corners and other situations just spoken of; also thinks it will do good to rake up leaves along edges of wood and put it together with straw into farm-pen. Believes the treading of cattle, and freezing and thawing and mucking it up will destroy them. Means to try these plans any how.

"Dr. William G. Carr sowed three varieties of wheat: White Flint, Early Purple Straw, and Mediterranean. Land all manured with stable or farm-pen manure, or with guano. Joint worm has injured White Flint most, Early Purple Straw next, and Mediterranean least. Wherever the wheat, no matter what variety, approaches old stubble, woods, or any place which could serve as a harbor for the *fly* (which deposits the egg,) the wheat is destroyed; and the injury has extended farthest into the field where the variety was latest. Thinks they come originally from wheat stubble and old straw, and does not believe that burning will get rid of them; or trampling either.

"Raleigh Colston sowed two varieties:—White Purple Straw on fallow, and Improved Red Purple Straw on corn land. Fallow curtailed one-half. Corn land totally ruined.—Thinks earlier seeding and improvement of the land the only reliable preventives.

"P. H. Goodloe. Most gentlemen are worst hurt nearest old stubble; in my case *just the reverse*. Wheat of several varieties, all guanoed, and all ruined; not worth cutting.

"R. W. N. Noland. Has three varieties—no difference in crop between different varieties. In same field are two sorts: Ruffin's Early Purple Straw and Noland's Monumental, the latter about one week later than the former, and seeded first. The Monumental divides two lots of Purple Straw. Upon that part of Purple Straw lying remote from stubble and stack-yard the worm has not injured the crop. Monumental injured near the stack-yard and *where the land was manured!* Purple Straw adjoining stubble entirely destroyed.—

But in another field *not* bordering on stubble, *nor* in the neighborhood of a stack-yard, wheat (Ruffin's Early Purple Straw,) *entirely ruined*; and a third lot (of Poland wheat), *similarly situated*, is seriously injured. The worm has gradually increased upon his farm for five years—has observed it that long; cannot trace it to any cause; cannot suggest any remedy: shall curtail his wheat crop. Two fields first mentioned either guanoed or manured."

We shall leave it to the reflecting reader to make his own comments on the above testimony; only adding, in conclusion, that we are a member of the Hole and Corner Club, and vouch the gentlemen who have here spoken.

For the Southern Planter.

BUCKINGHAM GUANO.

Mr. Editor,—I have for some time promised my friends to give notice to the public that a better and cheaper guano can be obtained in this country than the Peruvian. It can be obtained for one-half what that will cost; will answer the same purpose, and will insure equally as good crops of clover. Many persons are of the opinion that if they could spare the money to buy guano and spread it over their land, they would have found the philosopher's stone—the whole secret of readily improving their land, increasing their crops two or threefold, and in a short time be making money as fast as they could wish. But experience proves that ideal notions of things and practical results are as the boy that had a goose that laid a golden egg every day, but being impatient, he ripped up the goose and thereby lost all. So it is in farming; if you wish to improve your farms you must begin upon a well organized plan or system, and as cents make dollars, so one acre improved will help you to improve another, and as things help themselves you will acquire the means of improving on a larger scale. Guano is not a manure, as some suppose, but is that stimulant our impoverished land needs; it strengthens and invigorates our poor soils to bring better crops of oats, which should be as a fallow crop for wheat, followed by sowing at the same time clover, herdsgrass or orchard grass, which latter is little used by farmers; and, by the by, I consider the best grass to begin with, for it will grow most luxuriantly after guano, and affords such early and late grazing.

I propose, in this notice, to say to the public I can furnish guano equally as good as that imported, having the same properties, or, in other words, mixed with the same things that are contained in the guano; and although it is not generally known, there are but two valuable ingredients in guano, both of which are, in my compound, and shall not cost more than

half what that does. I can furnish a recipe how to use it on tobacco beds so that you can plant your crop from ten days to a fortnight sooner than you can with manure. It will take out that yellow appearance that plants sometimes have, and give them the same green, healthy growth of the best plants in your patch.

I can also furnish a compound that will destroy sheep-sorrel, sassafras, or any noxious plants or weeds in your fields; show you how to get clear of the curculio in your fruit trees, and raise finer fruit, such as plums and peaches than the tree ever bore, and apply the remedy to your gardens, and raise vegetables much richer and larger than you ever raised.

My address is Virginia Mills, Buckingham County, Virginia.

ROBERT BOLLING.

N. B.—Will the Enquirer, Whig, Examiner and Richmond Christian Advocate, please copy?
R. B.

If Mr. Bolling's promised manure shall do all that he thinks it will, he has indeed discovered a mine of wealth, not only to himself but to the farming community generally. His remedies for weeds and noxious plants, especially sassafras, are not less important. We presume, of course, that he has fully tested the efficacy of these various substances in performing each its respective office before offering them to the public. We would advise him, therefore, to state results, and have them certified, when necessary. It will insure much more speedy attention to his discoveries.

For the Southern Planter.

CLUB ROOT.

Mr. Printer,—"One of the Young Dumpings," in your June paper, wants to know if I can tell him anything about a disease called the "Club-Root," in cabbage and other plants. I never heard of it before: and have talked about it with all the housekeepers, old and young, male and female, among my neighbors; but not one of 'em ever saw or heard of it. The oldest (and wisest) of them all, says she reckons it's a *quizz*. I would hint to my young kinsman (if he is a sure enough Dumping, and not a quizz,) that perhaps the disease he complains of is the work of some insect, aided by a want of manure, and of good culture. The great Caroline farmer, Col. John Taylor, when his neighbors talked about the Hessian fly in their wheat, used to laugh at them and say, it was just "poor land lice." He would tell them, "Make your lands rich, and cultivate them properly, and the fly won't do your wheat much harm." So I say, plenty of ma-

nure, and a plentiful use of the plough, hoe, rake and harrow, will be the best cure, or preventive, for the "club root."

My young kinsman misspells my name, cruelly. It is not "Doritha," but

DOROTHY DUMPLING.

WILL GOOD FARMING PAY?

We are sometimes provoked by the receipt of letters from farmers who coolly undertake to set us right with regard to what we may term high and low farming—they considering our notions, occasionally indicated in the *Tribune*, entirely erroneous, or at least unsuited to the present condition of agriculture in this country. "Land is so cheap and labor so dear," say they, "that we *can't afford* to farm so high as the English and Belgians do." Now half the men who talk in this way have no clear idea of what superior farming really is, but, if pressed for a definition of it, will dilate on the unproductive expense of whitewashing trees, planing boards for fences, or something of the sort, which has nothing to do with farming at all. A farmer, good or bad, may expend so much capital in mere fancy-work as to render his farm unproductive and even an expense to him; but that does not invalidate the sound general rule, that *anything can profitably be well done, that can be profitably done at all*. To this rule we know no exceptions. One man's land may be unsuited to corn, or wheat, or barley, so that he ought not to attempt the growing of that particular grain; but if it will pay for growing *any* crop off it at all, it will pay for growing a *good* one. If it will not pay for such a crop, it will not for any; and should be turned over to something of which it will yield a generous return; and, in default of that, given up to pasturage and got into wood as soon as possible. To raise a twenty bushel crop of Indian corn ought to be indictable as a perversion and waste of the bounties of Providence.

The farmer who ploughs (once) five or six inches, and manures feebly, and gets in his crop late, and about half cultivates it through the summer, and gets a meagre half-crop in the fall, (unless cattle happen to break over his shiftless fences and eat it up mean time) not only dooms himself to fence and watch and pay taxes to twice or thrice the extent he ought, but he is committing a flagrant crime against Nature by *exhausting the soil of its virtues*. An official survey of our national agriculture estimates the deterioration of the soil of this country since its settlement by white men as detracting at least five hundred millions of dollars from its value! All observing men are familiar with facts which sustain this estimate. There are whole counties, and almost whole States, which would once have yielded an average of twenty bushels of wheat or forty of Indian corn to the acre, yet would

now (unmanured) average not more than twenty of corn, and not more than five of wheat. "The virtue has gone out of them." They have been gradually robbed of their fertility by false, miserable, wasteful culture. The elements essential to the production of the cereal grains have been gradually abstracted, and not returned nor replaced. They have been sent off to the cities, to Europe, and have long since served to fertilize British fields, or have been thrown from the docks, or crept through the sewers of our seaboard cities into the ocean. Every dollar of the diminished value of the soil is so much robbed by indolence and ignorance in the past from the patrimony of future generations.

Every acre of land under cultivation ought to be worth more after each year's tillage than it was before. It may not, indeed, be in condition to produce a larger amount of *that same crop*; if so, that is ample reason for changing to something else. To say that a farmer *can't afford* the fertilization and culture needed to obtain fifty bushels of corn from an acre, but can afford to own, fence, till, and pay taxes on it for twenty bushels, is an amazing absurdity.—*Star of the West*.

CORN SOWED FOR FODDER.

Who has tried *sweet corn* for this purpose? Our own experiments have been limited; but for milch cows we believe it is preferable to other kinds of fodder, as it may be sown thickly by using a full dose of special manure, and as too thickly sown to form ears, the stalks will contain a large quantity of saccharine matter, and may be sown frequently so as to keep a continuous supply during the whole summer and fall months.—*Professor Mapes*.

SUMMER GRAFTING.

M. Loiseau employs, for cleft and crown grafting, in April, May and June, eyes, which at the base of the shoots, buds or branches of the preceding year, have not been developed. After the end of June, when the young shoots have become a little hard, they may, after their leaves are cut off, be grafted just as the same branches would be grafted in the following spring. If the shoots are still too tender, it is as well to varnish them with grafting wax.—M. Loiseau made, in this way from the month of May to September, more than 150 plants, both from seeds and stones, and he did not lose more than one-fifth, although his experiments were made on a very dry soil, and no care was taken to protect the graft from being destroyed by birds, or by the dryness produced by the great heat of the months of June and July. He even succeeded in cleft-grafting an apricot in July. In May, two out of thirteen grafts

failed; in June, three out of twelve, in July three out of fifteen; in August, none out of twelve. It may be as well to remark, that a tree cleft, grafted in May, June, and even early in July, very nearly overtakes that grafted in the Spring, and there is very little difference between the two at the end of the year. Moreover, the cleft graft, if made in summer, begins to grow after a week, while the bud does not begin to grow till the end of a fortnight. The cleft graft has also this advantage over the bud—that the former does not require the bark to be separated, indeed, the less sap there is in this graft the better.—*Comptes Rendus.*

From the Germantown Telegraph.

NON-EXHAUSTING CROPS.

Mr. Editor,—There appears to be a singular error operating on the minds and influencing the conduct of a certain portion of our farming friends. I allude to the belief entertained by so many a few years since, and so strongly urged in some of the most influential agricultural publications, that certain crops are “non-exhausters,” and that, instead of depriving the soil of its *humus*, or fecundating *pabulum*, they not only do not take anything from it, but on the contrary, add essentially to its staple. Among the crops enumerated as belonging to this anomalous class, are buckwheat, peas, clover, beet-root, carrots, and, as some have supposed, tobacco. The most remarkable of the above, so far as this putative power is concerned, is buckwheat, which is frequently sown to enrich poor lands, and ploughed in at the period of inflorescence, or when in full bloom. The capacity of soils thus treated to a “meal” of buckwheat to produce cereal, is supposed by many to prove conclusively the non-exhausting nature of that plant. The same, though in a somewhat restricted sense, is said of the other enumerated crops. It will, however, be easy to prove conclusively the entire erroneousness of this hypothesis, if chemical analyses are to be relied on.—A celebrated writer on agriculture, speaking in his usually lucid style of buckwheat, says:

“Buckwheat—the entire plant, including the seeds, dried at 86 degrees Fahrenheit, yields four per cent. of ashes. The constituents of these ashes must have been derived from the soil. The analysis of the ashes of buckwheat shows that they consist of 29 parts of potas. salts; 45 parts

of lime and magnesia salts; and 26 parts of silica (*sand*.) Buckwheat must therefore be legitimately classed with lime plants, since lime and magnesia predominate in its ashes. The cultivation of buckwheat will therefore deprive the soil principally of its lime and magnesia salts.”

It will hence be seen that the abstraction of so heavy a per centage of these salts from a soil, must remove any plant, by which it is effected, from the category of non-exhausting crops, if indeed any such shall be found really to exist. That buckwheat derives a considerable, nay, a very large proportion of its aliment from the atmosphere, there is, and there can be no reasonable ground to doubt; but that it is capable of actually enriching the soil, by the mere act of growing, unless what it takes from the soil, associated with that which it derives from atmospheric sources, be returned to the former, is a fallacy too absurd for the most simple to indulge. When grown in this manner, turning it in unquestionably augments the staple of the soil, and thus it becomes an *ameliorating* crop; but if the object of its cultivation be simply its *grain*, no crop, in my opinion, is more decidedly exhausting. I have grown it on soils in which the most accurate chemical analysis detected but a very diminutive amount of calcareous matter, and on attempting to cultivate the same land the next year in corn, with the assistance of the most energetic manure, liberally supplied, have, without a single exception, failed to secure a crop. I have now entirely renounced its cultivation as a grain crop, except in very peculiar cases, and then only on a limited scale. The grain is excellent, but, like the gold of California, it often comes too dear.

AGRICOLA.

Lower Dublin, Oct. 19, 1850.

DRAININGS OF DUNG HEAPS.

Professor Johnston concludes, from experiments made by him, “that the liquid which flows from a dung heap, *watered with urine*, is greatly richer in ammonia and in saline matter, than that which flows from the solid excrements newly washed by rain; that the liquid in both cases, contains a considerable proportion of phosphate of lime. This does not exist in cows’ urine alone. In both cases it has been washed out of the solid dung; and that both contain also an appreciable quantity of silica not existing in urine—this is derived

from the straw of the fermenting farm-yard dung, or from the grass which has passed through the digestive organs of the cow; that as fermenting manure can yield in a soluble state every mineral ingredient which a plant requires, the liquid that runs from the farm-yard ought to be no less carefully preserved, than the pure urine of our cattle."—*Johnston's Lectures.*

TO PREVENT MOTHS GETTING UNDER HIVES.

Found a handful of peach leaves and salt them well, and strew them over the bench under the hive. In two or three days, repeat the operation. The flavor of peach leaves is offensive to the moth, but not to the bees.

Another Remedy.—Raise the hive about an inch upon four little pebbles. Take a piece of half-inch pine board from three to six inches wide and a foot long; cut one side full of creases about a quarter of an inch deep; lay this creased side down under the hive and you will find all the millers will use it to raise their broods under; because it is a secure place from the bees, but not from the bee-keeper. If he chooses to watch and kill, he will finally destroy the larvæ and save his honey.—*American Agriculturist.*

From the Massachusetts Ploughman.

PROFITS OF FARMERS.

Mr. Editor,—I see by your reports of the farmers' talk at the State House, in your paper of March 8th, that many of the speakers think there is small profit in farming.

Hon. Mr. Sprague doubted if the owner of a farm could lay by as *much* as one of his workmen. Perhaps he did not duly consider the full *extent* to which that expression would apply.

Undoubtedly the owner of a farm, of a *large and valuable farm*, like those possessed by most of the speakers last Tuesday night, expend more, aye *doubly more* in a year, in what their laborers would call luxuries, than they pay to any individual one of them for wages.

They should not expect to eat the apple and keep it too. They have advantages and enjoyments, of which the hard working man knows nothing. I would not be understood to say that the rich man is happier for his riches, or to engraft a spirit of discontent in the mind of the man who is necessitated to labor on another man's land. Far from it. I do not be-

lieve that wealth necessarily makes a man happy, but Mr. Sprague, as I understand it, is looking only at the dollars and cents; but there is another view of the case, which will make a material difference in the footing up; and that is the enjoyment which the owner of a farm has, in making improvements and seeing things grow that he planted or set out himself, compared with the laborer who works for him.

We all know (or if there are any exceptions, they are among my acquaintances,) that there is much satisfaction in making a good bargain, that there is much enjoyment in looking over our accounts at the end of the year, and finding a balance in our favor; but there is a deeper and more heartfelt enjoyment to *me at least*, and I doubt not to others, in seeing the thrift and lusty growth, year by year, of the trees and the vines I have myself set out on my own land; in looking at my fields, and knowing that the crops are much greater than they were a few years ago. Do I make a good trade, or do I lay up money at the end of the year? It is but transferring it from one to another. It might advantage the world more in his hands than in mine; but if I *increase my crops*, I increase the real wealth of the country. If I set out a tree, I transfer to posterity, what my ancestors have bequeathed to me. I think we Yankees are too prone to seek after the dollars and cents, and not enough given to the enjoyments of life. Many a man toils and struggles to accumulate property, letting slip in his mad haste after the Ignis Fatuus, all the golden fruits which his God has placed in his reach, and finds when he has grasped it, nothing but the apple of the Dead Sea in his hand, pleasant to the eye, but bitter as wormwood to the palate.

Let our farmers be content with sure gains, if they are small and gradual.

Let them, as one of the speakers has said, cut their garments according to their cloth; not striving to outdo in furniture and living, those who trade on credit, and shine for a little time like a comet, being as unsubstantial as that body, and disappearing us mysteriously at last, leaving nothing but a long tail of bad debts behind them.

A farmer, if he makes money slower than men in other occupations, (which I doubt) has much more chance of enjoyment, to compensate him for his deprivation of profit in his business. He has not

the wearing anxiety of mind which is felt by the trader, or shipper. His property is mostly in his own hands, not in the hands of the thousand and one, whom the trader has on his books, nor on the sea like the shippers of goods, exposed to the tempests and the waves. He is not called up like the physician, of a bitter cold night, to attend a patient three or four miles off, nor like the lawyer, obliged to plead bad cases or starve. He is not politely or impolitely asked like our modern ministers, to leave his home, with or without a reason; but, like Robinson Crusoe, he is lord of all he surveys, and my *caution* to him, in that case, is not to survey too *much*, and then he will not need to complain of its taking all his profits to pay his hired help, as with industrious habits he can do his work himself.

But I would close sir, by saying that we should have no more land than we can cultivate thoroughly and well.

A man will undoubtedly make more profit from a small farm, *well tilled* and manured, than from one four times as large *half tilled* and half manured.

L. H. H.

Westford, March 10.

For the Southern Planter.

AGRICULTURE IN THE VALLEY.

Mr. Editor,—Having, during the last few years, made several visits to the Valley of Virginia, from one of which I have just returned, I wish, through your pages, to give some of the impressions made on my mind by a comparison of the agriculture of that part of the State with our own.

The first thing that strikes a person on visiting the Valley from the southern part of Virginia is the great difference in the attention paid to hay and clover. In the Valley you may ride a whole day in a continuous arable country, and hardly find a field, which is not under some crop, but is well set in clover; and you will scarcely cross a stream, however small, along which you will not see a meadow. You will see this attention to clover and hay on the smallest as well as on the largest farms. This gives the country a most cheerful aspect, and become at once associated in your mind with great plenty and independence.

As to the comparative agriculture of the Valley and this part of Virginia, I will remark that in attention to clover and hay the people of the Valley are incomparably ahead of us. Our barren fields, and in consequence

of these, our small and poor cattle and horses, make a miserable figure to one who has just left the Valley; and they also, to the traveller, make an exaggerated impression as to our poverty and general mismanagement.

But in attention to manures and their application, my opinion is, that as a general thing, we, in this part of the State, manage better than they do in the Valley. On a large majority of farms that I could notice from the road, I could see very decided indications of neglect and mismanagement in the production and application of putrescent manures. And on inquiring of several intelligent farmers, I met with an almost unanimous declaration that there was great neglect on this head, and that their chief reliance for the improvement of their lands, is clover and plaster. And it was this neglect on the part of the Valley farmers that suggested to me the propriety of communicating these remarks to the Planter. And it is to this point I wish particularly to attract the attention of the planters of our part of the State. If, in connexion with our attention to putrescent manures, we could prevail on ourselves to use clover and plaster with liberality and according to some system, I am satisfied that in less than five years a great change would be seen in the face of our part of the State; and this change would increase every year with our experience of its advantages, and with our increased ability which this system would certainly produce.

We are equally able with the Valley farmers to adopt this system. I made inquiries of different persons and in different circumstances, and found that the cost of Plaster is as great there as among us, being about thirteen dollars per ton by the time it reached the farm. And I also found that from different parts of the Valley the expense of getting a barrel of flour to Richmond is one dollar and twenty-five cents, which is the amount from Halifax (one of the most remote points from market) to Petersburg or Norfolk. And after a good deal of observation and some experience, I am perfectly satisfied that clover will grow as well and produce as great and beneficial effects in every part of Southern Virginia as in the Valley.

One other particular forced itself upon me with a very painful impression, and that is the interest manifested in, and the attention paid to the prosecution of internal improvements in the Valley. Every one seemed to be aware of the immense value to any community of good roads; it was a question on which I heard no difference, and I would but have subjected myself to ridicule had I questioned the policy of having them; or had I suggested to them that they would have been in less danger of State or Federal oppression, if they had been satisfied with impassable roads and unmarketable products, but with light taxes. After a very careful effort to make an intelligent and impartial comparison of my own part of the State with the Valley, I returned

home with the full conviction that our climate is better, and, which many will think a bold word, our soil is as good, and our natural advantages greater. All we need is an outlet for our products—and I may with truth add, our prejudices on certain questions, and an inlet to the means and inducements to agricultural improvement. These, however, I apprehend, will not be adequately provided, until our planters, disregarding all minor considerations, and treating political metaphysics with the contempt they deserve, will cease to surrender the control of our part of the State to every imaginary and fantastic notion and whim, and neglect the one true and real interest among us. The history of the human mind does not furnish a more remarkable phenomenon than the fact that party politics and traditionary opinions and feelings have so *swamped* the understanding of Southern Virginia, as to make a people on all other subjects remarkable for intelligence, on this one so stolid as to make us doubt the utility or propriety of good internal communications between us and our principal market towns; or to suppose that that which improves every other part of the country will, in some incomprehensible way, injure or impoverish or enslave us. It is melancholy for so fine a part of the State as ours to be sacrificed to such a chimera; but there is no hope for any thing else until our planters shall unite and take their own interests into their own keeping, and no longer give in trust their intelligence, as well as their interest to politicians and adventurers.

Yours, &c.

JOHN T. CLARK.

Halifax, Va. June 4, 1851.

APPLES FOR STOCK.

In a late excursion through a portion of Otsego county, N. Y. we noticed that many farmers were in the practice of feeding apples to their stock. Calves of last spring, and sheep were the animals to which they were more commonly given. All agreed that they were very beneficial for this purpose. The apples were gathered in the fall and secured either in a cellar under the barn or protected from frost in some other convenient situation. The quantity fed to calves was about half a peck to each daily. They evidently greatly promoted the thrift of the animals, not only by the nutriment which they imparted, but also by their healthful action as a condiment and gentle cathartic sharpening the appetite and causing the dry hay to be better digested and assimilated. We have seldom seen calves which made a better appearance in mid-winter than several lots

shown us that had been fed in this way. We do not hesitate to say that every farmer would find an acre of ground appropriated to raising apples for stock, one of the most profitable investments of his capital and labor.—*Albany Cultivator*.

THE FLAVOR OF BUTTER AND CHEESE AS AFFECTED BY THE KIND OF PASTURAGE.

It is well known that the milk of animals is readily affected by the quality of food used for its production. Now, as certain kinds of herbage are found to impart an unpleasant flavor to milk and butter, why may we not conclude that other kinds will be likely to improve the ordinary flavor of these important products? We think the subject is one deserving the experiments of the farmer and the investigations of the chemist.

In our paper of June 15, 1846, was published an article by G. Emerson, of Philadelphia, attributing the peculiarly rich flavor of Philadelphia May butter to the prevalence of the *sweet-scented vernal grass* in the pastures of that region. In the recent agricultural report of the patent office we find a communication on the same subject by Dr. Emerson, in which he reiterates his former opinions, and gives various facts and arguments in their support. We copy the article with the hope that some of our Ohio farmers will test the matter by experiment.—*Ohio Cultivator*.

PHILADELPHIA BUTTER—SWEET SCENTED VERNAL GRASS.

Sir.—I wish to invite your attention to a subject relating to pasturage and the products of the dairy. It has already been laid before the public, but this so partially and imperfectly, that it will still be found by most persons invested with novelty, and, as I believe, fraught with important bearings upon agricultural interests.

Philadelphia butter enjoys a widely extended reputation for its peculiarly high, yet delicate flavor, well known to all who have had opportunities of tasting it. Good butter produced in this vicinity is always to be found in the Philadelphia market, but it is only during the spring that it possesses in greatest perfection that delicious flavor, to which I here particularly refer. This superior flavor like that distinguishing the Epping and Cambridge butter of the

London market, has been very naturally ascribed to something eaten by the cows producing it. But what this *something* is, has been a subject for vague speculation, and never yet defined or specified so as to enable persons in other localities to avail themselves of it for the improvement of their own pastures and dairy products.

Extensive observations and many experiments, made and continued through many years, have convinced me that the proximate source of the high flavor of our Philadelphia May butter is the *sweet-scented vernal grass*, abounding in the old pastures, fields, and meadows of the adjacent counties. Some of the facts and reasons upon which I found this conclusion are the following:

1. In the dairy region around Philadelphia the sweet-scented vernal grass, with its peculiar vanilla like fragrance, constitutes the predominant spring herbage on all the pasture fields and meadows left several years unploughed. The longer the pastures have been left unbroken, the greater the proportion of the vernal grass, and the higher the flavor of the butter produced from the cows fed upon them. Many of the meadows and pasture fields have remained ten, twenty, thirty, and more years unbroken by the plough. In such cases, the sweet-scented vernal grass affords almost the exclusive spring herbage.

2. The high flavor continues in the butter during the development of this grass, and invariably declines with the maturing of the seeds, after which the stems become dry and hard, and the cattle push them aside in search of fresher and greener herbage.

3. The sweet-scented vernal grass is shown by chemical analysis to contain an aromatic essential oil, of which *benzoic acid*, or flowers of benzoin, is the base.

This aromatic principle is abundant, and can be readily obtained by distillation, furnishing a delightful perfume and source of flavor. As the milk of all animals is so very susceptible of acquiring disagreeable tastes from substances eaten, such as garlic, turnips, &c. it is natural to infer that it may likewise be imbued with agreeable flavors, when the proper agents for such a purpose are presented in the food.

4. That the *benzoic acid* is the principal agent in producing the peculiarly agreeable flavor of butter made from pastures abounding in the sweet-scented vernal grass, I have rendered probable, if not a demonstrated fact, by several experiments

in which the flowers of benzoin given to cows imparted to the butter made from them the characteristic flavor. In such cases, twenty or thirty grains of the benzoin were given twice a day, previously dissolved in hot water, which was stirred into some flour or meal, and then mingled with the customary mess. The cows receive not the slightest injury from this or even a much larger quantity of the benzoin.

The sweet-scented vernal grass, called by botanists *anthoxanthum odoratum*, is a native of Europe, from whence, at an early period of our settlement, it has doubtless been introduced into the vicinity of Philadelphia, its seeds having probably been blended with those of other grasses. It has long been naturalized, and now disputes the right of soil with the common green grass, and never yields possession, but becomes more and more predominant until the sod is destroyed by the plough, after which it clings to the borders of the field, along the fences and hedgerows.—

When, after a rotation of grain crops, the ground is left undisturbed by tillage to be again covered by green-sward, the vernal grass re-appears, springing from the old seed left in the earth. Though seldom sown designedly in this part of the United States, it is often sown in England, where it constitutes a part of the growth of most permanent pastures, growing in nearly every kind of soil, but attaining its greatest perfection on the deep and moist, loving shady places, such as the skirts of woods. The sweet odor by which English hay is often distinguished, is chiefly derived from an admixture of vernal grass. Although when alone, it is not distinguished very highly as a hay grass, still its early growth and hardness, with the superior nutritive properties of its after-math, give it high claims in the composition of all permanent pastures. In England it comes into flower about the middle of April, and in southern Pennsylvania about the middle of May, the seed ripening in both countries about the second week in June. It is worthy of remark, that in the moist climate of England, this grass continues throwing up flower-stalks, till the end of autumn, while in Pennsylvania the efflorescence is confined to spring. As the development of the aromatic qualities is mainly confined to the period of efflorescence, this fact may explain why the period of highest flavor in Philadelphia butter is so limited.

The question might be very naturally asked: If the sweet-scented vernal grass

communicates to spring butter the high and delicious flavor we have referred to, why is not this flavor imparted in winter when cows are fed on hay cut from meadows known to contain this grass? The answer I would give is as follows: The principal and almost exclusive hay-grass of our section of country is timothy, which, with red clover frequently combined, matures and is mown long after the sweet-scented vernal grass has dried its stalks and lost its distinguishing fragrance. Could the vernal grass be sown alone, or blended with other grasses maturing at the same time, and the hay all mown at the stage of perfect efflorescence and highest fragrance, there is little doubt that butter made from cows fed upon it would manifest more or less of the fine flavor at other times than in the spring. I think it proper to remark that the milky products of cows fed on pastures where the sweet-scented vernal grass abounds, instead of always possessing a delightful flavor, are sometimes found imbued with a most disagreeable one, proceeding generally from weeds so often existing in pastures. In southern Pennsylvania, garlic, and especially that nauseous and troublesome plant commonly called the "ox-eye daisy," a species of wild camomile (*chrysanthemum leucanthemum*), are very often nipped by cows when the herbage is short or scarce. In such cases, all the agreeable qualities that might otherwise have been derived from the vernal grass are not only neutralized but overpowered by the disagreeable tastes imparted by the bad company with which it is associated. I consider the sweet-scented vernal grass worthy the attention of all farmers desirous of possessing the means of obtaining butter and other dairy products in the highest perfection, and of having in their fields and meadows one of the earliest, if not the very earliest pasture grass known.

But to these advantages, great as they are, may, I think, be added others of no small importance; one of which is the capacity to confer a fine flavor upon the meat of stock grazed upon a species of herbage fraught with a high aromatic principle.—Such advantages have, from time immemorial, been the inheritance of people in certain localities, where they were originally indebted for them to chance, as, for example, with those residing in the vicinity of Philadelphia, few if any of whom are aware that there exists in their pastures any grasses not common to those of other

places. To identify the immediate agent from which such advantages are derived, is to remove them from the uncertain control of accident, and place them at once at the disposal of all.

A description of the grass, the merits of which I have been describing to you, may be found in the Farmers' Encyclopædia, (Philadelphia edition for 1850.) under the head of *Anthoxanthum Adoratum*, figured in plate 6, a.

Very respectfully,

G. EMERSON.

Philadelphia, Oct. 1848.

MULES vs. HORSES.

A correspondent of the South Carolina Farmer and Planter, who appears to have had much experience in raising mules and horses, states that he has kept a particular account of the expenses of each, for the last ten years, and he says, "in no instance have I ever been able to bring the horse to the plough for less than from fifty to sixty dollars; on the other hand, I have invariably brought the mule to the collar for twenty to twenty-five dollars." In regard to the comparative expense of keeping, he says "the mule can be kept in as good condition as the horse, and will perform the same labor, however severe, in the same time and on about one-half the feed." In addition to this, the mule will out-live the horse by fifteen to twenty years and is seldom sick or crippled.—*Albany Cult.*

PLANTING OUT ELMS.

A Philadelphia correspondent of the Horticulturist states that in setting out a hundred elms from the forest, about eighteen feet high and as large as a man's arm, he fully tested the advantage of *heading back*. The tops were so handsome that he was reluctant to touch them; he accordingly left a part entire, and shortened back the remainder about one-third, to correspond with the necessary shortening of the roots outside of the large balls.

Few trees were lost; most of those with entire heads made little or no growth the first year, and many limbs died and had to be cut out. Of those cut back, all lived; and their leaves the first summer were three times as large as on the unpruned trees. They have outstripped the others

so much as to have entirely regained the symmetry and beauty of their heads.—*Albany Cultivator*.

Although we have very frequently alluded to the subject of heading back newly planted trees, yet we too often see it entirely neglected, or if done at all, in so unskilful a manner that it proves equally fatal. Many trees removed from the forest and set as shade trees in the yards and streets of our towns and cities are by a clean stroke with the axe deprived of their entire head, which leaves them in a condition about as likely to vegetate as a bean pole. In heading back a shade or fruit tree, its branches only should be cut, leaving two or more prominent eyes or buds to each, from which new shoots will be readily formed and the tree firmly established in its new position.—*Louisville Journal*.

FLINT ENAMEL WARE.

Some ten or fifteen years ago, Mr. Fenton, a manufacturer of fire bricks, &c. at Bennington, Vermont, commenced a course of experiments on the liquefaction by heat and intermingling in various proportions, of the flint quartz, &c. used in his business or existing in the mountains around him, with an eye to the production of wares adapted to household uses. In these experiments he persevered, until at last he was enabled to produce a ware combining strength, purity and beauty—composed entirely of flint, feldspar and quartz, ground together, bolted like flour, then formed into a clay or paste, and moulded into any shape which taste or use may suggest, then covered with a delicate enamel and baked to a consistency exceeding that of marble.—The enamel is formed entirely of flint, without a particle of the metallic bases which renders much of the ware now in use always dangerous and often virulently poisonous.

The flint enamel ware, though especially prized by us for its capacity to supersede the enamelled wares now used for milk-pans, stew-pans, coffee urns, &c. is intended to subserve a far wider circle of uses.—Among the articles into which it has already been fashioned, are water-jars, stove-urns, mantel and other parlor ornaments, lamps, and candlesticks, table-slabs, door-plates, door-knobs, block-letters, daguerre-type frames, inkstands, pitchers, wash-bowls, bathing-tubs, spittoons, &c. &c.

The usual color of this ware is a rich, dark brown shaded and flecked or mottled with white and blue, though it is made of pure white when desired. It is harder than marble, and a delicate pitcher may be thrown on the floor with violence without starting the handle. The point of a nail driven smartly against its side with a hammer makes no scratch or dent of any kind. The enamel stands heat perfectly, and all this ware may be, as most of it is, made absolutely fire-proof, so as to be buried in a pit of burning anthracite and come out of the ashes as good as new. Withal it is nearly as cheap as the "stone ware" now in use. We cannot doubt that it will rapidly find its way into very general use throughout the country. The ware is patented, and agencies for its exclusive sale, by counties and towns, are being formed throughout the Union.—*New York Tribune*.

A NEW DRAINING PLOUGH.

We find the following account in an English paper of a new draining plough. We know nothing of its merits other than what we see stated; but its construction strikes us favorably, and should the following description do nothing more than incite our ingenious mechanics to get up something similar, our object in copying the article will be effected. We presume this plough will be exhibited at the World's Fair in London.

Mr. Cotgreave's principle consists of a series of ploughs derived from the carpenter's plane; in fact it is nothing more nor less than a land plane; and when seen, every one must wonder why the principle now brought into operation has not been applied years ago. With the exception of the main drains, all the work, even to the obtaining the perfect level of the drain, is performed by the plane plough. Mr. Cotgreave has so adapted his plough that with four horses he can throw out a drain from four to five feet deep. The saving of time is another material object. The work by this process is almost incredibly expeditious, and very little damage is done to the surface; indeed, in grass lands, a heavy roller will repair all damages. The cost of workmanship is half the price of manual labor, on the present system; and the time occupied one-tenth, while the work, to say the very least of it, is as efficiently and durably performed.

We now proceed to the detail of the plough. We find that the necessary staff of men is ten, and of horses four; and with this at command, Mr. Cotgreave will be enabled, without distressing either horses or men, to commence two statute acres in the morning, and finally complete, that is, cut the drains, (including the main drain,) lay the pipes, fill in and make good the surface of one statute acre, and half prepare the second to be ready for work the next day. The plough, as we have already explained, is on the plane principle, and, by means of screws, can be adapted as occasion requires, even while in operation in the cutting, to take a shaving or two, three, four, five, or six inches in depth.—This control of the plough is most necessary, as it must be evident that certain portions of the land, requiring to be drained, frequently have undulations; and if there were no regulating principle, it is quite certain no water level could be obtained by a plough. This point, we particularly impress on the attention of our readers; because every practical man, at first, would inquire how this difficulty is to be overcome.—*American Agriculturist.*

SWEET POTATO CULTURE.

Mr. Editor,—Believing that the following extraordinary yield of sweet potatoes, with the system of cultivation adopted, would be interesting to your readers, I furnish the same. To those of us living on the seaboard, the potato crop we consider very important; and our planters have devoted no little attention in ascertaining the best system of culture. The subjoined account, as you will perceive, was furnished to the Agricultural Society of Liberty county, by one of its members, Mr. G. B. Dean. I would further remark, that the gathering of the potatoes was under the supervision of a committee, of which I was chairman.

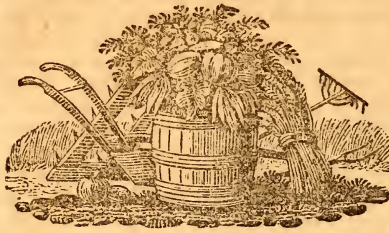
"In 1843," says Mr. D. "I cow-penned some old wornout lands filled with carpet-grass, and in July I planted the same in slips. In the fall of the same year, I dug the potatoes, and turned in hogs, which, by rooting, turned up and exposed the roots of the grass to the winter's cold. In the month of January, 1849, I listed it up in five feet rows; in February, I ploughed up the alleys again; in March, I bedded up the ground, and planted sweet potatoes about the 25th. I put twenty bushels to

the acre, or five to the task, taking good care to *have both ends cut off*; and, cutting the seed two or three inches in length, placed them two inches apart in a trench three inches deep, *covered deep*. So soon as the potatoes began to come up, I shaved off the top of the bed with hoes, some five tasks to the hand. This work destroyed all the fine grass, and the plant then came up finely. As soon as the potatoes were all up some three or four inches, I listed down with the hoe some three tasks to the hand. Four days after, I run two furrows with the Ruggles plough, and drew up the bed, being careful to place the dirt well under the potatoes. I allowed them to remain until the vines were about twelve inches long; I then listed down again near to the plant very lightly, turning up the vines carefully. After allowing them to remain for two days, I broke up the alley by running one furrow with the double-mould board plough, deep in the centre. I then bedded up closely, returning the vines to their places carefully with the hand. I did nothing more, except to pick over, in the month of June, all the grass. The yield was *from nine to ten and a quarter bushels to the task row*. One-fourth of an acre yielded *two hundred and ten bushels*, or at the rate of *eight hundred and forty bushels to the acre.*"

OBITUARY.

We are pained to have to announce the death of MR. A. D. ABERNETHY, the Horticultural writer for the Southern Planter. He died in this city on Saturday, the 28th of June, of congestive fever. He was a native of Scotland, but for a number of years past had been a resident of this city. By his industry and skill he was very successful in his business as a Horticulturist; and by his obliging manners and strict integrity he won the esteem and enjoyed the confidence of our community.

Plants perspire more abundantly than animals. Thus a sun-flower will perspire in a warm day thirty ounces, or, as it is said, as much as seventeen men. The stem of a vine cut off near the head, with a bladder fastened tightly around it, will, in the sun, soon send off in the form of perspiration, sap enough to swell and to burst the bladder.



THE SOUTHERN PLANTER.

RICHMOND, JULY, 1851.

TERMS.

ONE DOLLAR and TWENTY-FIVE CENTS per annum, which may be discharged by the payment of ONE DOLLAR only, if paid in office or sent free of postage within six months from the date of subscription. Six copies for FIVE DOLLARS; thirteen copies for TEN DOLLARS, to be paid invariably in advance.

✍ All subscriptions must commence with the January or July number.

✍ Office on Twelfth, between Main and Cary Streets.

✍ Communications for the Southern Planter, upon *other than business matters*, may be addressed to the Editor, FRANK G. RUFFIN, Esq. at *Shadwell, Albemarle Co., Va.*, which will insure their being more speedily attended to.

BUSINESS LETTERS will be directed as heretofore to "The Southern Planter," Richmond, Va.

✍ Postage prepaid in all cases.

THE JULY NUMBER is a good time to commence subscriptions. Every farmer ought to take *and pay for* one or more Agricultural Papers—and Virginia farmers ought to support *their own paper* in preference to others.—We confidently anticipate a large increase of our list, and shall print a larger edition of this number than usual, for the purpose of furnishing new subscribers. We wish to make our journal second to none in the Union, and we will do it, if the agricultural community will sustain us. Will the farmers of Virginia give us the necessary support?

POSTAGE ON THE PLANTER.

Under the new law, which takes effect on the 1st of July, the following will be the rates of postage on the Planter, *per quarter*, for the distances annexed—to be paid quarterly in advance:

Not over 50 miles, 1½ cents.

Over 50 and not over 300 miles, 2½ cents.

Over 300 and not over 1000 miles, 3½ cents.

Over 1000 and not over 2000 miles, 5 cents.

Over 2000 and not over 4000 miles, 6½ cents.

Over 4000 miles, 7½ cents.

The above is taken from the late decision of the Postmaster-General; and it will be seen that the rates are so low as to amount to almost a freedom of any postage at all. Formerly there was much objection made by many farmers to subscribing to the Planter on the score of the high rates of postage—now that objection has been removed, and we trust that there will be not a few who will test their appreciation of the benefits of cheap postage by sending us their names to be added to our lists.

✍ Our correspondent who wishes to know how and when to save *clover seed*, shall have a full answer in the August number.

We expect a first rate Essay on *Tobacco* for our next number.

Many of our subscribers are considerably in arrears. Such as are, will confer a favor upon us and do an act of justice to *themselves* by a prompt remittance of their several dues.

TALL WHEAT.

Mr. Nathaniel F. Bowe, of Henrico, has left in our office a sample of pretty tall wheat—measuring six feet, six inches in length of stem. The heads are about six inches in length and are well filled. It is of the "Woodfin" variety.

We have also a small sample of wheat raised in *our patch*, (the publisher's) over which we are disposed to brag a little. The straw is not very long, but the heads are well filled, and measure from seven to nine inches. It is said to be of the "Mediterranean" variety, with smooth heads.

We have a sample too of "Troy" bearded wheat raised in our patch, which is well worthy

the notice of those interested in such things. It presents a well filled head, and is the largest wheat we have ever seen. The seed of this sample were obtained from the Patent Office, and we will be glad to distribute them to those of our patrons who desire to try them as an experimental crop.

CROPS—WEATHER.

WHEAT.—The early wheat crop has been harvested, and from almost all quarters we hear that the labors of the husbandman have been rewarded by a generous yield. In this neighborhood (Richmond) the returns have been very prolific, and the quality of the grain as good if not better than it has been for years. The weather for harvesting has been most propitious, and we congratulate the seedsman upon the ample recompense that Nature has bestowed upon his exertions.

CORN.—Whilst the dry weather in June has retarded the growth of this crop, it has enabled the farmers to kill the grass and get their fields clean,—the late copious rains have greatly improved it, and with good seasons during this month and August, the yield will be a very heavy one.

OATS.—The oat crop, we hear from different sections, is almost a failure. The dry weather has cut the crop short fully one-half, if not more, and a very general scarcity is anticipated.

"THE FARMER'S GUIDE."

We have received Nos. 19, 20, 21, and 22, which complete the "Farmer's Guide." They are filled with valuable and interesting matter. The "FARMER'S GUIDE" comprises two royal octavo volumes, and contains 1600 pages, including 600 woodcuts and 14 engravings on steel. Price in Nos. \$5. In vols. bound in the best style of emblematic gilt muslin, \$6. To be had of Nash & Woodhouse, Agents, Richmond.

SHRINKAGE OF CORN.

Knowing that a great difference of opinion exists among farmers as to the loss of corn by shrinkage or drying, from the time it is cribbed in the fall, until spring, say the latter part of March, I determined to satisfy myself on this point—at least so far

as one single experiment could determine. On the 23d of November last, the day on which we finished husking, I measured two bushels of ears in a standard bushel, as accurately as I could. I then weighed each bushel, found the weight forty-eight and a half pounds respectively. The number of ears was fifty-eight in one, and fifty in the other. I had one barrel shelled, and got thirty-three and a half pounds, by weight, and half a bushel and half a peck by measure, and ten pounds of cobs. The corn was spread in a dry, airy place, where it remained till a few days since, when it had lost just half a peck, or fifty per cent. by measure, and a fraction over three pounds, or ten per cent. in weight.

This shows a difference of forty per cent. between the loss by weight and measure. How is this difference to be accounted for? It is owing to the minute division of the water in the corn, that while we find a loss in weight that should occupy a space less than three pints, there is an actual loss of eight pints in bulk. The cobs of this parcel were accidentally destroyed; so that I was prevented from ascertaining the loss of the cob.

The other bushel of ears was kept in a dry, airy place and shelled a few days ago, and gave just half a bushel of corn, weighing just thirty and a quarter pounds.

These are the facts, as gathered from my small experiments. The corn was a variety of the white, between the gourd seed and flint—a mixed variety, having from ten to twenty-six rows. The corn was in good condition for housing at the time we finished husking.—*Albany Cultivator.*

From the Albany Cultivator.

ASHES OF ANTHRACITE AND BITUMINOUS COAL.

Messrs. Editors.—During the past year, several of the students in this laboratory have, at my suggestion, been examining the ashes of our ordinary coals, with a view to the determination of their practical value for agricultural purposes. The analyses now completed are so accurate and so minute, that we are for the first time able to speak positively with regard to coal ashes, and to point out the differences which exist between them and other varieties of ashes. The researches of modern geology have shown that the beds from which at the present day we obtain the various forms of coal, consist chiefly of the remains of an ancient vegetation, which, beyond all question, covered large portions of the earth's surface

at some period in the earlier history of the planet. This vegetation must have been dense and luxuriant beyond anything that occurs at the present day. Some of the many convulsions and internal throes which have altered the position of rocks, upheaved hills and mountains, opened deep valleys, brought up dry land from the midst of the sea, and sunk whole continents beneath its surface again, have overwhelmed this vegetation, and heaped materials above it, which have gradually hardened into rock. Stratum after stratum has thus accumulated, new layers of vegetable growth have even been deposited above the first, by a subsequent growth and subsequent burial. The vegetable masses thus crushed under the superincumbent pressure of perhaps a thousand feet of rock, and exposed to heat at the same time, changed into what we now call coal. The product was either anthracite or bituminous coal, according to the different circumstances of formation, and the different degrees of heat to which the beds were exposed. In the immediate vein of the coal, all traces of vegetable structure are commonly lost, but in the roof of the mine are frequently to be found perfectly preserved stems and leaves, so perfect that the botanical character of the plant can be clearly decided. We are thus able to see, and to feel, on the surface and in the texture of solid rock brought sometimes from a depth of sixteen hundred feet, the forms of that superb vegetation which clothed parts of our globe for centuries, or I may say long ages, before man became its inhabitant.

The formation of these vast vegetable deposits seems to have been one of the means by which our all-wise Creator prepared the world for our comfort and sustenance; when we have exhausted, in our improvidence, the vegetable growth of the surface, we find buried deep beneath all of our present disturbing causes, the organic structures of preceding periods of time, stored away in a form exactly adapted to our uses and wants.

The quantity of coal now consumed annually in civilized countries, may be counted by millions of tons, and is increasing in proportion with the spread of manufacturing, and the extension and augmentation of commerce. If we take any single bushel, or even a single ton of this coal, and burn it, the proportion which remains unconsumed is altogether trifling in comparison with the original bulk, and may seem almost unworthy of note; but when we come to count our tons by the thousand and hundred thousand, this subject of coal ashes begins to expand; and when we consider in this view the immense aggregate quantity which every year must afford, we see that the disposal of them must be a matter of much importance. If the thousands of loads that are annually wasted, contain even a small percentage of substances valuable to our crops, the preservation of these ashes becomes a question of great public interest. That they

must contain something, is rendered almost certain when we first ascertain the fact that coal is of vegetable origin; the next point is to inquire how much there is that may be of value to our crops at the present day. It is with the view of deciding this question, at least with regard to some of the principal varieties of coal used in this country, that the analyses herewith given have been made.

The coal was ignited in an ordinary furnace, and the fire, when well kindled, was allowed to burn for nearly a whole day, before any ash was saved; the grate was then well raked out, the ash pit carefully cleared and swept, and the ashes that fell after this were collected. These precautions were taken to obviate all danger of mingling some of the ashes from the wood or charcoal employed in lighting the fire.

The samples for analysis were taken each from several pecks of ashes, obtained in this way.

The investigations with regard to the anthracite ash, were made by Mr. J. B. Bunce, of Hartford, Connecticut, and his results were the product of much careful labor, nearly all of the percentages being the mean of two closely concurring trials. He took fair samples of the ordinary white and red ash coals, and after burning in the way that I have described above, commenced his analyses. According to these, the following table shows the general composition of ash, from the common kinds of coal. That there is a variation in the ash yielded by coal from different veins, I am well aware, but still do not suppose that they are so marked as to materially injure the value of these analyses. I think that they probably approach quite nearly to a true representation of the character of anthracite ashes, and that they may be looked upon as very valuable for all practical purposes.

Each column of figures represents the constituents of 100 lbs. of ash.

| | White Ash. | Red Ash. |
|-------------------------|------------|----------|
| Insoluble in acids..... | 88.68..... | 85.65 |
| Soluble silica..... | .09..... | 1.24 |
| Alumina..... | 3.36..... | 4.24 |
| Iron..... | 4.03..... | 5.83 |
| Lime..... | 2.11..... | .16 |
| Magnesia..... | .19..... | 2.01 |
| Soda..... | .22..... | .16 |
| Potash..... | .16..... | .11 |
| Phosphoric acid..... | .20..... | .27 |
| Sulphuric acid..... | .86..... | .43 |
| Chlorine..... | .09..... | .01 |
| | 99.99 | 100.11 |

These close and interesting analyses, afford us much light upon the constitution of coal ash, and enable the chemist who has studied these subjects, to say at once and with confidence that this ash is of some value as a manure, and should by all means be so applied in cases where it can be obtained cheaply.

Of the white ash 3.74 lbs. in 100 were solu-

le in water, and in the red ash 3.35. Besides this there was a further and larger portion soluble in acids, amounting in the white ash to 53 lbs. in 100, and in the red ash to 8.00 lbs. This latter class of substances cannot be considered as immediately available for the plant; but they will nevertheless gradually decompose and become soluble in the soil, thus affording a constant supply for a long period.

On referring to the table, we see that the greater part of each ash is insoluble in acids; this part consists chiefly of silica, alumina, and iron, and thus the great bulk of these ashes is inactive as a fertilizer; the remainder as we shall find, is of more importance. It will be noticed that the quantity of lime and magnesia taken together, amounts in each case to about two and a quarter per cent. A portion of this lime was in combination with sulphuric acid, forming the common gypsum or plaster of Paris. The potash and soda were doubtless chiefly combined with the phosphoric acid and with the trifling quantity of chlorine. The very considerable per centage of soluble silica in the red ash, is worthy of attention as a curious fact.

In looking at the nature of these results we may draw the general conclusion, that in the ash of anthracite coal, calling these fair specimens, we have in every one hundred pounds from four to eight pounds of valuable inorganic material, of a nature suitable for adding to any soil requiring manures. This is the perfectly pure ash; as we ordinarily find it there is mixed a greater or less proportion of ash from the wood or charcoal, used in kindling the fires. There is without doubt enough of this, in all ordinary cases, to add considerably to the richness of the ashes. But even if we take them in their pure state, as represented by the above analyses, we can see that they are well worth collecting, and that when applied in considerable quantity they may be expected to produce a decided effect. Indeed I have reports already as to the experience of several practical men, who have used them with much advantage.

An analysis of the ash from bituminous coal has just been completed in this laboratory, by Mr. G. W. Weyman, of Pittsburgh, Pennsylvania. I do not insert it here, as it is to make its first appearance elsewhere. I may state, however, in general terms, that this ash has about the same proportion of soluble substances as the anthracite ashes, but is superior to them in the per centage of lime, and of potash and soda, which it contains. It is, therefore, also of some importance.

When we consider, according to the above analyses and statements, that in every ton of coal ash that is wasted, we throw away from 100 to 150 lbs. of valuable materials, more valuable by far than an equal bulk of our ordinary manure, we perceive plainly that the farmers have not understood their true interest in letting this waste go on.

These ashes can be applied with advantage

as a top-dressing on grass land, or as mixed in a compost; they would also be of service when thrown into tanks and hollows, to absorb liquid manures.

Having thus called attention to this subject, it is to be hoped that our farmers who are able to obtain quantities of coal ash, will experiment on a large scale, and add practical to theoretical proofs of its value.

Yours, truly,

JOHN P. NORTON.

Yale College, Feb. 25, 1851.

The bituminous coal is the kind most generally burned in Richmond, and, as it appears from the above, to be richer in several important inorganic substances than the other, it is, of course, better adapted to the wants of the farmers about Richmond, to whom we believe it is always given without charge. Cannot some subscriber in that neighborhood give us the results of a trial with it?

From the Genesee Farmer.

SPRING-TOOTH HORSE RAKE.

A good horse rake is now in use, called the Spring-Tooth Horse Rake. It is light, and may be carried by one man all about the farm. The elasticity of the teeth prevents their breaking or fastening to any obstruction with which they may chance to come in contact. They operate very well on rough or stony ground, and are first rate for raking wheat stubble, and thus gleaning what would otherwise be wasted. From one to two bushels to the acre is often secured in this way, and one man with this rake can glean twenty acres a day.

The rake, as usually made, has a head about nine feet long, and from twenty to twenty-four elastic wire teeth. It does not revolve, but is raised over the winrow with ease and facility, without stopping the horse; the whole rake weighing only about sixty pounds, and the hills being upheld by the horse, the holder has only to lift one end of the rake by the handles, and the advance motion of the horse will have carried it over the winrow while the holder can lift it up and down properly. The holder bears down on the handles more or less, according to the size of the winrow he wishes to collect, and leaves the winrow when and where he pleases, by quickly raising the handles, as before stated. Price, eight dollars.

We have seen the above described rake work, and think it works well in gleaning wheat; better than the old revolving horse rake, which tears up a good deal of clover in

its course. Those who follow the practice of gleaning with a horse rake of any sort we should think would be well pleased with this. But the policy of the practice is doubtful. It injures the clover as above stated, and collects nearly as much dirt as wheat, if run directly after the reapers, when the ground is dry. In wet weather it will not answer at all, nor after the wheat has been caught by a rain. Several years ago we made two successive trials in raking wheat fields: the first year the wheat was much injured by dirt, and the barn was filled to suffocation with dust: the next year we fed the raked wheat to hogs without threshing it.

"From one to two bushels to the acre is never secured in this way" here, nor, in our judgment, any where. That quantity is rarely left on the ground under the worst cutting, and cannot be saved by this or any other rake if it is.

If a field is cleared of the wheat as soon as it should be, hogs are the closest and most economical gleaners.

For getting up timothy *the spring-tooth horse rake* will not answer, as the teeth are too weak to hold much hay. It is still worse in clover. We have never seen a proper substitute for the old revolving hay rake at this work, in which it is a most valuable implement. And even that fails in rank and tangled clover.

CANALS AND RAILROADS.

Farmers are largely interested in the cheapness with which their crops, whether cotton or grain, provisions or tobacco, can be conveyed to market. To most agriculturists, the cost of transportation to the nearest seaport is a serious item of expense; and whoever can furnish any facts calculated to lessen this annual tax on the great staples of the country will render them an essential service. Most railroads and all canals are sustained by freight, if sustained at all, more than travel. It is worthy of remark, however, that the transportation of property being an important and indispensable business, it naturally draws a corresponding amount of travel into the same line, and usually upon the same thoroughfare. For a railroad to secure the freight of a planter's cotton, is to create a condition of things by which the

chances are that he will pass twice and perhaps four or six times over the road as a passenger, and employ it to transport his year's supply of salt, iron, groceries, hardware and dry-goods to his residence, or stopping place. There is always a broad district of farming lands under cultivation, just without the commanding influence of a canal or railroad, which is not tributary to its revenues without a very nice calculation of profit and loss. All these works of internal improvement may be regarded from their present infancy as not having settled the practical question how cheap their proprietors ought to carry persons and property to realize in five or ten years, the highest return for their investments.—The Erie canal is the oldest work of the kind of any extent in the United States, and all its trade is subject to the common laws which govern the use of a canal or railroad every where. It can only command the business of the people to a large and profitable extent, by doing it at a small per cent. above cost, and reducing the cost to the lowest attainable point. This far-reaching policy brings millions of acres of wild land that yielded not a ton of freight, nor a single passenger, speedily under the plough, for it has become too valuable any longer to remain a waste prairie or forest. It is wonderful how accurately the cultivators of the soil estimate the availability of a railroad or canal to reach any market. There was not so large a foreign demand for breadstuffs and provisions in 1850 as in 1849, yet a small reduction of tolls on the Erie canal increased the tons sent through it from 1,897,310 in 1849, to 2,475,600 in 1850, being a gain in a single year of 578,290 tons. The value of property transported was \$127,641,594 in 1849, and \$140,658,009 in 1850, being a gain of \$13,016,405. The Erie canal delivered at tide water from the 13th to the 30th November last, in fifteen working days, different kinds of property equal to 100,000 barrels of flour daily.

It is no impeachment of the sagacity of the able men who manage this public work to say, that it has taken them twenty-five years to learn that there was a half million tons of freight *within their reach*, but unattained, because they charged a mill or two on a ton per mile more for the use of the canal than the farmers could afford to pay. These farmers were of course outside of the circuit of its former business, while a few weighty articles near the canal passed down it by reason of reduced trans-

portation. In 1849 there arrived at Buffalo, and were shipped by canal 59,444 barrels of beef in 1850, 78,839, and over 800,000 pounds of tallow. Notwithstanding, there has been a regular reduction of tolls for more than twenty years, and only when experience demonstrated a gain in revenue by an increase of trade, and there has never been an advance in tolls since the canal was completed in 1825, yet a farther reduction of nearly twenty per cent. is likely to be made for the navigation of 1851.—The New York and Erie railroad creates its business by carrying persons from village to village for two cents a mile, and freight at a still lower figure in proportion. All are keen to make money in the earliest and fastest manner; *but the way to do it?* That is the question. For all purposes of freight and travel, the stockholders of the iron roads from Chattanooga to Savannah and Charleston, own a vast and fertile region in the great State of Tennessee, and not a little in northern Alabama and Georgia, which now yields no revenue whatever. There is no sound sense in keeping this property in its present unproductive condition. Wishing that it was fairly settled, cultivated and highly productive, will never make it so, without adding good works to a rational faith. If the business of the present population is worth anything, it is almost self-evident that to double this population will add not 100, but 200 per cent. to their annual surplus for export.—The law which governs the surplus of a civilized community for sending abroad is not well understood by those who have never made the inland and foreign commerce of a people a study. No inconsiderable share of human industry is prompted by imaginary wants, or natural ones modified and indulged by the habits and customs of society. These create the necessity for large exchanges, and an ever augmenting trade and commerce, which in turn give a market for cotton, wool, sugar, and all other products of farm labor.

The wealth and civilization of America are in its soil; and railways and canals, rightly understood and used, are valuable machines to develop these latent resources. It is a curious fact that with all their ready money, numerous manufactories, and vast mineral and commercial resources, the people of England are able to consume but thirteen and a quarter yards of cotton cloth each on average per annum; while the people of this new, and as some Englishmen assert, half-civilized country, annually

consume thirty-two and a quarter yards of cotton to each free inhabitant. Why we can and do beat them nineteen yards on a basis of thirteen and a quarter to each man, woman and child, must be sought in our free institutions, our extended area, invaluable Union, and the popular intelligence that maintain the rights of the many. If we will look around and see how many poor families there are, and of those not poor, that consume less cotton goods by two-thirds than they really need for their comfort, we shall discover a *home market*, growing with astonishing rapidity, for twice the cotton now consumed in the United States. There are a hundred ways in which railroads and canals increase the demand for calico dresses and cotton shirts. These highways are the friends of the planter, unavoidably so; but their owners best consult their own interests when they study constantly to reduce the cost of freight and travel to the lowest point consistent with prudence and justice to themselves.

New York has, by the recent census, about 260,000 more inhabitants than the six New England States. This is one of the fruits of a wise and liberal policy; and we are happy to know that Georgia is rising fast in the just estimation of all her sisters, and steadily attaining noble ends by noble means. We have just broken up our last fine specimen of her Burr mill-stone rock to supply cabinets with samples of this valuable mineral. It has given us pleasure to call public attention to this Burr rock in a work of which one hundred and thirty thousand volumes will be distributed, more or less, in every county in the Union.—We will venture to name, in this connexion, one other matter in which we take considerable interest and that is the construction of a continuous railroad from Lake Michigan to Mobile and the Gulf.—Although this road will share with the Erie Canal in the millions of tons of western freight, yet there will be enough for all, and the delegation from western and central New York voted public lands to aid the grand enterprise. This railroad will confer lasting and inestimable benefits upon Mississippi, Alabama, Georgia and South Carolina, as well as upon Tennessee, Kentucky and the vast and fertile regions north of those States and of Arkansas.

The February number of *DeBow's Review* contains an able and instructive article on the "The Future of the South," which, however, leaves off at the point where we should begin, if writing on the

same suggestive theme. It is so inviting, possibly we may review the reviewer in the pages of this journal; in the meantime, we think it not amiss to say, that if any of its patrons wish to see a northern publication that claims one hundred thousand readers, the proprietor of which has done something to make the resources of the South understood at the North and West, they have only to send fifty cents to the "*Genesee Farmer*, Rochester, N. Y." to receive the work for a year. Mr. Barry, conductor of the Horticultural department, is a practical man of large experience, and wholly devoted to his profession. We are informed that the office of the *Genesee Farmer* booked over twenty thousand names in January. We mention these personal matters mainly to stimulate our Southern friends to extend the circulation and increase the usefulness of the SOUTHERN CULTIVATOR. It can add to the value of your property, and will do so, if you will only lend a helping hand. We are powerless without your cordial co-operation. Double the circulation of this journal and we will spend at least four months in each year in the cotton growing States, giving lectures or doing whatever else may promote the agricultural interests. It is bad economy for a setting hen to waste her time incubating a single egg. Give her a nest full and the business amounts to something. Very few appreciate the value of time. Rightly employed, it is rare indeed that it does not command complete success. Numbers are indispensable in every popular enterprise, and we must have at the South at least twenty thousand co-laborers in so large a field, to realize a satisfactory result. The cause is worthy of much greater support.

LIME FOR THE CURCULIO.

Much having been said in favor of lime as a remedy for the curculio, and as the time is approaching for its yearly assault on young fruit, the knowledge of past experiments becomes desirable. A near neighbor,—who is a distinguished fruit raiser,—tried lime in nearly all imaginable ways last year, and with the following results:

Nectarines, plums, and apricots, were thoroughly syringed with thin lime wash; and as each successive rain and heavy dew carried it off from the smooth surface of the young fruit, it was re-applied as often

as necessary. Special attention was given to the nectarines, which for six years' blossoming had yielded no crop; and to be still more secure against this, the lime was applied carefully with a brush to each young nectarine. About three days in the aggregate were spent in this way; and the result was, that the full number of six entire specimens of the nectarine were saved from destruction out of the whole orchard. But on further inquiry it appeared that these six all grew on a tree under which a young calf was kept confined during the season of operation; and to whose presence chiefly, these specimens owed their escape.

The lime was believed to have a repelling influence, and some hopes were at first entertained of its efficacy; but it was soon discovered that the coating was disregarded, and the eggs were thrust through it into the green pulp. The whole trees with their entire crop of leaves whitened with lime, did not present a very ornamental appearance.

The application of lime appears to have been elsewhere in some cases quite successful—it becomes a subject for inquiry whether any collateral influences assisted it; whether the favorable result was not owing to something else, and was erroneously ascribed to the lime.—*Alb. Cult.*

CUTTING AND LAYING TILE DRAINS.

Messrs. Editors.—The subject of laying tile drains, is one upon which I have written before, both for the *Cultivator* and other agricultural publications, but there are some reasons why it seems best to enter upon it again at the present time. After all that has been spoken and written by myself and others in favor of draining, and of tiles, it is in my experience still, the fact that a majority of the farmers in most districts are even yet unable to tell what a tile really is, much less to say what should be done with it in making a drain. In some quarters, however, enterprising men have introduced their manufacture, and as fast as their usefulness becomes known, the demand for them is increasing. I have received letters from numerous sources, inquiring as to the nature of tiles, where they are to be procured, how they were to be laid, &c. &c.

In my "*Elements of Scientific Agriculture*," I have devoted part of a chapter to a description of the various kinds of tiles used, the modes of laying them, the tools employed, and the systems of arrangement best adapted to different situations and classes of soil. Mr. Colman, in his "*European Agriculture*," has also dwelt upon this subject somewhat at

length. These books, however, are not known to all, and do not, in themselves, furnish anything more than an outline of what may now be called the *science* of draining. I find that in practice, various unseen difficulties arise, which are not provided for in the books, and now propose to notice some points relative to the actual working details of drainage, without referring much to theory. In doing this, I am not aware that I may possibly err in some of my practical views, but as they have been mostly drawn from observations of real experience, they probably will not lead any one very far astray. Bye-and-bye, when time has shown the success or failure of their respective systems, some of our practical drainers must give us the details of their management.—

While waiting for such developments, I will endeavor to answer a few of the inquiries that have been from time to time addressed to me.

1. The form of tile now preferred by the best foreign authorities, is the pipe, or simple cylinder, cut in lengths, and laid so as to join end to end. This form can be made cheaper than any other, being all in one piece; for the same reason it can be transported at smaller cost, and is less liable to breakage by handling. The common objection on the part of those who have never seen these tiles at work, is, that water will not find its way into such a close connected tube. I might reason upon this subject at length, but cannot now spare the space, and will simply assure all doubters that the water does, in some way, get in, and that they cannot, even by any process of packing stiff clay around the tiles, manage to exclude it. This has been proved over and over again, in practice, and is no longer a point for argument.

2. A frequent subject of inquiry is, the nature of the tools proper for cutting the narrow ditch required for tiles. One great saving in their use, is this reduced width of the drain. It is customary to run one or two deep furrows with a heavy plough along the line of the drain, thus partially throwing out from eight to ten inches of the surface. The loose earth is then cleared away by a common spade, and the next ten or twelve inches taken out by a spade of the same shape, but narrower. Another spade still, six or seven inches wide at the top, but not more than two or three at the bottom, and quite long, takes out the lowest portion of the earth, leaving just about space for the tiles to lie, and for a man's foot to rest. A peculiar scoop-shaped hoe is frequently employed to finish the bottom of the drain smoothly, by cutting out small inequalities, and removing loose earth, which cannot so conveniently be cleared away by a spade. In coarse, hard gravel, or where large stones abound, such a perfectly formed ditch as I have described, cannot well be made. In these cases the cut must be more or less irregular, and in hard soils must be much wider than is absolutely necessary to receive the tile.

3. When the ditch is completed, the tiles

are carefully laid on the bottom, end to end, care being taken that no wide vacancies occur, and that each piece is firmly in its place. In a very mellow and smooth soil, it is quite possible to cut the bottom so accurately to the size of tile employed, that the pieces can be laid and held in their places by the sides of the ditch. In the majority of cases, however, this cannot be done, and it is best to wedge them in as compactly as possible, by small stones placed at proper intervals along their sides. If this precaution be not taken, they are liable to be disturbed when the earth is thrown in to fill up. The end of a single tile thrust an inch out of its place would probably cause the stoppage of a long line, so that this point must be carefully attended to. Many practical drainers recommend laying a little piece of turf, grass side down, or a bunch of straw or shavings, over each joint, in order to prevent earth from sifting in. This, of course, is a safeguard, but in ordinary circumstances it is an unnecessary expenditure of labor. If the soil thrown back has become entirely dry and powdery, enough may possibly sit in to do some mischief; but if it, or at least the first few shovelfuls, be in an ordinary state of moisture, no such result need be apprehended, provided, always, that the joints are well made, and the lime firmly secured in its place. A point which is often neglected, is the proper packing of the earth in filling. This should always be done with care, so as to avoid that washing of mud into the pipes, which would be likely to occur if the soil above them were left loose and porous.

4. If any curves are made in the drain, they should be of a gradual character. It would be better to blast or remove even a large rock, than to make an abrupt curve in a long drain. It is easy to see that the tiles would not join closely together on a sharply curved line, and even if cut to fit, the danger of stoppage would be greatly increased, owing to their greater liability to get out of place. Such curves, too, retard very seriously the flow of the current, and for this reason, the drain is less likely to clear itself of many small obstacles which may obtain entrance. Where the fall is gentle, this consideration becomes of especial consequence. It was said by Mr. Smith, of Deanston, that tile drains might be made to discharge water, where the fall was but *one inch* in a mile. This, obviously, could only be done by the exercise of some engineering skill in levelling, &c. Where the fall is one foot in a mile, the work is not difficult, although, even then, it must be very nicely done, and the channel very even. The greatest difficulty on a gentle fall, is found in gravelly and stony soils; it requires some patience to straighten and smooth the bottom of a ditch in such a situation.

5. Some persons have supposed that machinery is used abroad for laying the tiles.— This, I have never seen, and am inclined to think there is some mistake in the matter, for

I cannot see that any advantage would result from the employment of machinery in such work. A good, careful man, when the ditch has been well cleaned out and levelled, can lay the tiles and secure them in their places with great facility. Where the fall is inconsiderable, slight inequalities in the bed of the ditch, and consequent bends of the tiles, do not seem to be injurious. On the sides of hills, I have seen them laid quite carelessly, precautions only being used to keep the ends where the tiles met, in close contact.

6. That as a general rule the drains should run straight down the slope, and in parallel lines, is now considered a fact beyond all question. Such drains discharge the water better than others, and dry the ground more completely. At the foot of the slope, they discharge into a main cross drain, made of large tiles, or in some cases of flag stones. Where the slope is very long, it is recommended to run a cross drain about half way from the top. This is to prevent the liability to choke, which exists in very long drains of small diameter.

7. A pipe of one and a half inches inside diameter, is quite sufficient for the small drains, where they have not to run more than two hundred feet; for greater distances a two inch interior diameter would be preferable. Farmers among us who commence draining with tiles, are apt to spend more money than is necessary, by purchasing larger sizes, under the impression that it is not safe to use the smaller ones. If, however, any person will calculate how much water may be discharged in twenty-four hours by a pipe of one inch bore, it will be perceived that but a few such pipes constantly running to the utmost of their capacity, would make quite a brook. The three and four inch sizes commonly used, are, in ordinary cases, never taxed to more than half of their capacity.

8. It is apprehended by some farmers, that the tiles would soon become choked, if laid in that mixture of sand and clay which almost runs when saturated with water. I have never seen any precautions employed in such cases, and do not believe them to be necessary. The tile itself, almost instantaneously, dries that part of the wet soil with which it comes in immediate contact, to such an extent that it will no longer run; it becomes a porous medium through which the surplus from the still saturated portions filters clear into the drain.

9. In quicksands, and bogs, where the bottom is very soft and yielding, it has sometimes been found best to lay a foundation of broad refuse plank or boards, upon which the line of tiles is placed. The pieces being short and heavy, are otherwise liable to sink unevenly, and gradually work out of place. Drains have been laid in this way with eight or ten feet of soft bog beneath them and have worked well, at least for some years.

Many of the tiles that I have seen in this country, have not been well baked, owing probably to inexperience in the makers. They should be burned hard, so as to ring when

struck, and show a full red color. The soft, pale-colored ones are apt to crumble away in the soil, and will not stand at all when exposed to the action of frost.

I have thus answered briefly, most of the questions that have been addressed to me by different individuals, and shall be happy to give any further explanations that may be desired, as far as I am able to furnish them.

Yours truly,

JOHN P. NORTON.

FENCING—WIRE vs. CEMENT.

An article extracted from *DeBow's Review*, on the subject of wire fences, is going the rounds of the press at the South. A comparison is therein instituted, in respect to cheapness and durability, between the ordinary plank fence and the wire fence of a Mr. Sibley, of St. Louis. It is unnecessary for our purpose to give the details—the results arrived at by the writer, are, that a well-made plank fence of best materials, four feet six inches in height, which cost one dollar and fifty cents per panel of same length, will cost only sixty cents. The wooden fence, it is estimated, with much care, will last fifteen or twenty years—the wire, with very little care, (keeping it coated with white lead,) will be good for fifty or sixty.

Now, we do not doubt but that many farmers in Alabama will be anxious to give the wire fence a trial. It is certainly more lasting, cheaper, and infinitely more sightly than the plank fence. And then, it is a St. Louis invention—it comes from a distance; and “distance lends enchantment to the view.” We ask their leave, however, to make a suggestion in favor of a home production, which is cheaper, more durable, and in every respect superior, to board fences, brick fences, or wire fences. Its only objectionable features are, that the patentee lives in their midst, and that the fence may be made by every man from the dirt at his own door!

The cement invented and patented by John R. Remington, of Montgomery, is, in our opinion, a far more useful invention than even his Aerial bridge. It makes the best roofing in the world, and applied as a paint to fences and timber buried in the ground, protects forever. But its chief use will be for making solid fences, rivalling granite in strength and durability, at a cost not greater than that of ordinary post-and-rail. So simple, too, is the process of manufacturing, that any plantation hand in a few hours can be taught to make the cement for fences as well as the inventor. The most expensive ingredient being sand, the chief cost is the labor of preparing it; and this our readers are, most of them, more competent to judge concerning, than we. When it is recollected how much time is lost on every plantation by the hands, during “rainy spells,” it will be evident to all, that if the

ence be as represented, and it can be manufactured by plantation hands, it must be the cheapest and best in the world.

Mr. Remington's estimate of the cost of his cement fence to the planter, is ten cents per panel of ten feet by five—four inches thick. But suppose that it is twenty cents, or forty cents, or even double that—it would still be under the cost of the wire fence.

But the wire fence requires a machine to put it up—the cement panels are conveyed, like rails, to the spot, and the two legs of each get into the ground like ordinary posts. The panel is up in ten minutes; and every day adds to its strength. If a heavy tree should fall across and crush one of these panels, a few hours would suffice to make the cement and replace it; but, of course, the farmer who adopted this mode would keep on hand a few surplus panels for such contingencies.

In the course of a few days, we shall receive from Mr. Remington, to exhibit to our friends, a specimen of panel of the cement fence, and also a specimen of the cement which is applied as paint to fences. The right to use the invention in all its forms, may be purchased by individuals at from \$25 to \$100.—*Tribune.*

From the Plough, Loom, and Anvil.

ON THE USE OF CHARCOAL.

BY COL. M. P. WILDER.

I noticed in the last number of your valuable periodical, the request of Mr. Trimble, soliciting advice as to the advantages of charcoal, and the best method of using it as a manure.

I reply with pleasure, but my experience has been on a limited scale, and my operations confined rather to the garden than the farm, on account of the difficulty of procuring it in sufficient quantity for the latter purpose.

My attention was first drawn to the influence of charcoal, by the wonderful experiments of Baron Von Liebig, in the propagation of plants, and the facility with which cuttings were rooted in this substance.

Its use became very general in Europe by amateurs and cultivators of plants, and for a time it was considered as a great fertilizer. Chemists soon ascertained, however, that its chief virtue consisted in its great porosity, being able to absorb 90 per cent. of its bulk of ammonia.

As a medium for storing up the volatile portions of manure and compost heaps, and for absorbing the ammonia which descends in the snow and rain, it has probably no superior. But what renders charcoal still more valuable is its power of holding in reserve these subtle elements, and yielding them up only as they are wanted for the purpose of nutrition,

and as the vital force of the root searches for food.

It will therefore be readily perceived, that charcoal is not only valuable as a component part of manures, but that its influence, when applied alone, is highly beneficial. Instances similar to those quoted by Mr. Trimble, where large crops had been obtained from lands on which charcoal pits had been burned years before, are frequently witnessed. In this vicinity a farmer has annually, for the last eight years, harvested extraordinary crops of hay on these charcoal lands, without the application of any manure whatever; and from the indistructibility of this substance, I know no reason why he may not continue to do so for the next twenty years to come.*

One of the most striking illustrations of its efficacy, when applied alone, that has come to my notice, was the experiment made by Mr. Hayward, of Sandusky, Ohio, many years since, and which, if I am not mistaken, was published either in the last volume of your Farmer's Library, or the first volume of *The Plough, the Loom, and the Anvil*. The facts I think were substantially as follows: Mr. H. having prepared his coal by grinding in a mill, set apart seven lots for experiments, the soil and cultivation being precisely alike on each, except as it regarded the application of charcoal. The result was, that on the lots where fifty bushels of coal were applied, there were twenty-five bushels of wheat obtained, while on those lots where there was no coal applied the crop was only five or six bushels. It will be borne in mind that there was no other manure administered to the crop, and that consequently the fertilizing properties must have been imparted by the ammonia which was stored up in the coal.

This experiment was very satisfactory, but not more so than many others which we have

* The testimony on this point is by no means uniform; some averring that they could see no difference in the crop where the kilns had been burned, while others assert the contrary. The coal brought to the Washington market from Virginia, a distance of ten or twelve miles, sells for ten cents the bushel; in New York the price is fifteen cents. They say a cord of pine wood will make thirty bushels, equal to the price for which the wood sells in the same market, \$3—in New York, \$5. But the force which would bring the cord of wood will take a hundred bushels of coal. Such is the advantage of manufacturing on the spot, whenever it can be done. For the same reason that the farmer wants to have the mill, and the smith's shop, and the school, and the store, not only in his own county, but close to his door, he ought to desire to have the loom and the anvil close to the plough; whenever the one can be supplied with the wool and the other the iron, here at home. Will the time ever come when reason and common sense shall prevail over early prejudices and uncommon sense?—*Edit. P., L., & A.*

P. S.—The facts stated are from the plain working men whom we meet selling coal in the street.

witnessed, particularly in the application of charcoal to fruit trees, plants and garden vegetables; and I have yet to see the first instance where charcoal formed a part of the compost, that vegetation did not grow luxuriantly, producing the increasing and quickening effects described by Mr. Trimble. In fact, it is no unusual circumstance to notice the roots of trees and plants either clasping pieces of charcoal, or piercing them through with their fibres. The best method, when any considerable quantity is to be used, would undoubtedly be to grind the charcoal, and I should prefer that one-half at least should be as coarse as Indian corn. As to the amount which may be applied to the acre, I think Mr. Hayward's experience will furnish a good criterion, although I have no doubt a larger quantity than fifty bushels to the acre, for the first dressing, might produce an increase of the crop.

If charcoal is to be applied *alone*, and without manure, the time is not material, except that it should be well incorporated with the soil, either by ploughing in, or harrowing, but not deeply. Mr. Trimble describes his soil as being "generally a strong yellow clay based upon limestone." Charcoal will no doubt prove valuable on these lands, but more so on light soils which allow the salts of manure to leach through; for clay is also a substance which holds securely the volatile portions of manure, and when made fine by the frost or otherwise, is a capital ingredient for the compost heap.

P. S. On recurrence to my file of letters I find Mr. Trimble's, but which, from the circumstance of its arriving just as I was on the point of starting on a journey, was laid aside, and "being out of sight was out of mind." From the character of his land, "liming" would not only be a waste, but worse than a waste of time and money, the soil being already sufficiently charged with lime. And here let me drop a word of caution, never to use lime either in conjunction with charcoal or the manure heap, on account of its disengaging the fertilizing gases and sending them off in "thin air." I beg his pardon for the neglect, and fear from the haste with which the above had been written, that it will be of little service to him or others.

M. P. WILDER.

Boston, March 4th, 1851.

MANAGEMENT OF A COW WITH HER FIRST CALF.

There is so much common sense—so much true philosophy in the following, that we feel it to be our duty to commend it warmly to favor:

Mr. Russell Woodward in the Memoirs of the N. Y. Board of Agriculture, says: "I have found that young cows, the first year that

they give milk, may be made, with careful milking and good keeping, to give milk almost any length of time required. But if they are left to dry up early in the fall, they will be sure to dry up of their milk each succeeding year, if they have a calf near the same season of the year; and nothing but extraordinary keeping will prevent it, and that but for a short time. I have had them dried up of their milk in August, and could not by any means make them give milk much beyond that time in any succeeding year.

"I have two cows, now, that were milked the first year they had calves till near the time of their calving again, and have continued to give milk as late ever since, if we will milk them."

We have seen the efficacy of the above plan verified.—*Editor American Farmer.*

From the Genesee Farmer.

INTERESTING LETTER.

Messrs. Editors,—I have but little to communicate that will be interesting or useful, as regards the cultivators of the soil in this vicinity. The labors are probably as well directed and performed as in any section of the western country. One fact I think is worthy of record, and that is, that mother earth, ever kind and always unalterably just, has again the past year fully compensated all for the labor bestowed. How few seem to realize the fact, that although thus kind, she is always inflexibly just—"As you sow so shall ye also reap."

I deeply deplore the almost universal ignorance of the cultivators of the soil in reference to their peculiar and responsible calling. None of us for a moment think of employing any mechanic to work in wood, who is not qualified, by education and practice, to judge of the adaptedness of the different kinds of wood, to determine at once whether it is suited for the uses required. Neither do we employ a mechanic to work in the different metals, without his possessing the like requisite knowledge of them. Few are willing to employ a surgeon or physician unless he possesses an accurate knowledge of the human system, and also of the remedial properties of the medicine necessary to be prescribed. Or to engage any lawyer who has not the requisite acquaintance with the various laws enacted for the benefit of society. Few are esteemed learned who cannot so arrange the letters of the alphabet as to express the simplest truths in the simplest

language, but also so to arrange them as to convey the mightiest facts and truths in such a manner as to possess both light and power. What great and momentous results have been produced by the suitable arrangement of the simple letters. Nations have been controlled and swayed, as the mind of one man. And shall the cultivators of the soil be less learned? They are the honored foundation upon which the whole magnificent structure of human society is built. They are the Egypt of the whole world. By the right disposal of the simple elements placed in their hands, they can supply with food and every comfort, many times more inhabitants than now dwell upon the earth. They can transform the wilderness and the desert into the luxuriant and beautiful garden, multiplying continually those products that make life a blessing, and their enjoyment by the millions equal. Or, by the misuse and abuse of their ample means, convert the rich and luxuriant earth into a waste and barren desert, bringing misery, want, wretchedness, and depopulation upon the world.— Few, comparatively few, of those professing to be the tillers of the earth, know much of the constituents of the soil they try to cultivate—of its wants, capabilities, or adaptation to produce the different grains and grasses, profitably, they wish to cultivate. Consequently much of their labor is unprofitably directed. The proper tillage of the earth with all its attendants, is the most useful, important and ennobling, that occupies the mind and energies of man. Who, that has a heart to appreciate the varied beauties of the ever teeming earth, rich in all that renders life a blessing, but that will prefer to wisely and judiciously multiply the needed products of earth. Brother farmers, if we have chosen his healthful and useful employment, let us strive to obtain the requisite knowledge that shall enable us fully to understand our whole duties. Let us call in the aid of the arts and sciences, and tax every faculty, until we can understand the nature and properties of our various soils, and daily pursue our labors with as much intelligence and skill as any mechanics or professional men. Then shall we make our calling honorable and useful. He who hath made the earth with all its alternations of light and darkness, rain and dews, cold and heat, beauty and apparent sterility, has mercifully promised to crown our labors with blessings that no other calling or profession can claim. He says to us: "He that tilleth

his land shall be satisfied with bread." I witness with pleasure the improvements that have been made and that are being made in the various useful implements we need to perform our labors. No class of men have better opportunities to improve their minds and hearts than the farmer. Let us improve them.

ORANGE H. WAIT.

From the Working Farmer.

THOROUGH DRAINING, SUBSOIL PLOUGHING, &c.

At a late meeting of the New York Farmers' Club, we had an opportunity of hearing the views of a number of practical farmers on the above subject. We were more than ever convinced of the great utility of such meetings.

The views of theorists are fairly tested when subjected to the investigations and objections of practical men, while the want of tact for the ready application of philosophical truths is compensated for by the suggestions of theorists, and thus theory and practice lend their mutual aid in arriving at not only the truths of natural laws, but of their economical application to practice. The following were among the remarks made by the members present.

In relation to draining, it was observed that the advantages arising from its practice was not confined to the mere mechanical operation of getting rid of surplus water from the soil, but the improved results now so well known to arise from under-draining, were, in part, attributable to the action of the atmosphere on the ingredients of the soil. Land thoroughly under-drained and subsoil ploughed, may be said to be so conditioned as to avail of Nature's laws more economically, than when such practices have not been resorted to.

Viewing the soil as the *debris* of rocks, it should be understood that the different alkalis and other substances resident in the particles, are not always in a condition to be dissolved by water or used by plants, but if the atmosphere be brought into immediate contact with these particles, changes go on which render all the surfaces susceptible of being rendered soluble by atmospheric and consequent chemical changes. Thus from feldspar potash may be liberated, and by its influence silic may be rendered soluble. Sulphurets which are unfavorable to vegetable growth, may be changed to sulphates; minute surfaces coated with alumina may absorb ammonia from the atmosphere and retain it for the use of plants, and increased quantities of heat abstracted from the circulating atmosphere are stored up, and thus the genial influences of increased temperature, with the supply of organic constituents derived from the atmosphere, are placed at the disposal of the anticipated crop.

Should inert vegetable matter be disseminated in the soil, these circumstances are favorable to its decomposition, and Nature's great organic storehouse, the atmospheric ocean, is not debarred entrance by putrid water, as in undrained soils, nor does under-draining tend to render the soil less retentive of a proper amount of moisture. On the contrary, well disintegrated soils will receive at all times, by condensation from the atmosphere, a fair supply of moisture fully charged with the organic, and capable of dissolving the inorganic constituents for the use of plants.

After soils have been under-drained and subsoiled, they rapidly increase in carbonaceous constituents, and a greater depth of arable surface is the result, whilst the ease with which roots can percolate to increased depths, enables them to bring up the inorganic constituents of the sub-soil, and by their decay to depo-it it nearer the surface. The entrance of the atmosphere at greater depths, assists in the decomposition of roots so deposited in the subsoil, rendering it rapidly similar in quality to the surface soil, by increasing its organic matter.

It was urged that subsoiled meadows never run out; that those plants which tiller, such as the grain crops, cereals, &c when grown in land not deeply disintegrated, require thick sowing, because the termini of their roots, when brought into contact with a cold and rigid subsoil, would become diseased, and would, therefore, cease to throw out side shoots and form tiller or duplicate plants. In deeply disintegrated soils this difficulty is avoided. Many instances were given of fields, part of which were subsoiled, defying droughts in those parts. It was stated that the roots of the cornstalk would average many feet in length, and its broad hardy leaf had never been known to roll or curl, while the roots had a fair opportunity to roam in a free, deep soil. The increased yield from sub-soiling was freely admitted by all. It was urged by one member, that fruit trees, grape vines, &c. grown on subsoiled land, would bear fruits of superior flavor; the aroma, as well as all their proximate principles, being mainly dependent upon a ready supply of the necessary inorganic constituents.

In reply to some remarks relative to the downward filtration of soluble portions of manure, it was urged that a soil containing a fair proportion of alumina and of carbonaceous matters resulting from the decay of vegetable fibre, would never allow any of the soluble constituents of plants to filter downward beyond the reach of the roots of growing crops. That if the brown fluids of the barn-yard should be poured on the top of a barrel filled with such soil, the water running out from the bottom would be found to be limpid and inodorous, all the parts valuable for the use of plants would be retained, and that if this were not true, water drawn from wells on properly cultivated farms could not be drank.

It was also stated that water issuing from the mouths of under-drains never contained ammonia, the whole of that substance being arrested by the soil during the downward filtration of the water. Whereas rains falling on the surface of soil disintegrated but to slight depth, might pass over the surface running away to the river, thence to the ocean, carrying with it not only the ammonia received from the atmosphere, but also the soluble materials it might meet with during its passage over the surface soil. All admitted that subsoiled lands might be fertilized and kept in heart at less cost than those not so treated. The new subsoil plough sent to the Institute by Mr. George H. Barr, was exhibited to the members, and its advantages were fully explained. The amount of power necessary to move this instrument is so much less than that required by any of its predecessors, that the cost of subsoiling is no longer a serious objection to its adoption.

Specimens of draining tile were also exhibited. These are now manufactured by many persons in the vicinity of New York, at prices varying from eight to fifteen dollars per thousand, each tile being fifteen inches long. The use of the Upton draining tool, by which ditches of but a few inches in width may be dug to any required depth, was fully explained. The superiority of tile over stone drains, both as to durability and economy, was made too evident to be doubted.

The proper depth for drains formed also a part of the discussion. It was remarked that but a small portion of water entered the under-drain during its downward course, but that when the lower pan became filled with water, and it rose even with the lower side of the drain, it would then enter and run off; and hence that drains of five feet depth and eighty feet apart, would be generally found to equal those of three feet depth and twenty feet apart; for the water occupying the lower pan could not rise by accumulation nearer the surface than three feet, at half way between two drains eighty feet asunder, and it would be found to average an approach of three feet at ten feet either side of the centre point between the two drains; thus to secure the same conditions with drains of but three feet in depth, they would require to be but twenty feet apart.

Almost every question which could suggest itself in relation to subsoil ploughing and under-draining was asked, and was satisfactorily answered. Indeed, we have never heard these subjects more fully and fairly treated. We give above, our recollections of what transpired, and hope it may be sufficient to induce our farmers to accept the invitation so fully extended by the American Institute, for them to attend the meetings of this Club.

An interesting feature of this Club is, the gratuitous distribution of scions, seeds, &c. At the proper seasons those members having superior fruits, bring grafts for distribution, and many thousands of worthless trees in the

vicinity of New York have, in consequence, been rendered profitable to the owners, besides supplying our markets with fruit of improved sorts. No applicant for scions ever leaves unsupplied, and thus the finer sorts of fruits may be indefinitely multiplied. The *Alfalfa clover*, received from Captain Glynn, United States Navy, is now being distributed.

CUTTING TIMBER.

"During an experience of more than forty years, as a plain, practical farmer, I have taken much interest in ascertaining the best season for felling timber, and I now state, with confidence, that fencible timber, such as all kinds of oak, chestnut, red hickory and walnut, cut from the middle of July to the last of August, will last more than twice as long as when cut in winter, or common barking time in spring.

"For instance: cut a sapling, say five or six inches in diameter, for a lever, in the month of August, and another of similar quality and size in winter or spring. I know, if the first is stripped of its bark, (which at that time runs well,) it will raise, as a lever, at least *twice* the weight that can be raised by the latter.

"Another great advantage derived from felling timber in the last running of the sap, (the time above specified,) is, that it is neither subject to dry rot, nor to be injured by worms; while oak cut at this season, if kept off the ground, will season through two feet in diameter, and remain perfectly sound many years; whereas, if cut in winter or spring, it will be perfectly sap rotten in two years.

"For shipbuilding and other purposes where great expense is incurred in construction, the immense advantage of preparing the timber at the proper season must be evident to all. I have no doubt, a ship built of timber cut between the middle of July and the last of August, would last nearly twice as long as one built of timber cut at the usual time; and would bear infinitely more hard usage, as the timbers season more perfectly and are far harder. A few years since, one of the large government ships, built in Philadelphia, of the very best materials, but several years in construction, when ordered to be finished and launched, was found upon inspection to be entirely worthless in many of the timbers, (though kept under cover,) from dry-rot. In all my building for many years past, with large timbers of white or other oak, this has never occurred, nor are they subject to be worm-eaten. Even firewood cut at the proper season is worth from thirty to sixty per cent. more than when cut in spring or winter."

Mr. William Painter, of Concordville, Pa. communicated the above to the Patent Office

Report last year. The season is at hand for all to make trial of this mode of getting timber, who choose to do so. Wherever it is wished to make a clearing it may answer very well either for fuel or timber, but we doubt the propriety of it where the land is to grow up again in wood. August is the season always chosen by those who have leisure to mow off sassafras and other pests from their fields, because they put up less than at other times; and we would fear that forest trees would not "*sprout*" as readily if cut at the same season.

From the Working Farmer.

SOWING CORN FOR FODDER.

Where corn fodder is intended to be used in the green state, we would recommend the Stowell's evergreen corn, as it has a large stalk, and if planted too thickly to give ears, is nearly as sweet as the sugarcane, and therefore particularly well suited for milch cows. When Stowell's seed cannot be had, use the Northern sweet corn.

Another writer in the *Michigan Farmer* says: "Dent corn is the best for fodder, it grows taller; by no means sow the yellow kinds. Dutton is next best.

"Before frost, bend up the tops of two rows and tie them; set up as much as you can conveniently bind at the top; the crop is now secured from frost and rain; let it stand until late in the fall, &c."

"Macedon, N. Y. 3d mo. 21, 1851.

"Mr. Editor,—I observe, in a late number of the *Michigan Farmer*, an inquiry for the best mode of raising corn for fodder, and having tried several different ways the results may be of benefit to others.

"A common and a very objectionable practice, is to sow broadcast. This requires at least four bushels to the acre, and even with this amount of seed, the growth is not dense enough to keep down the weeds, and as a consequence, the ground is left in a foul condition.

"The best way is to sow in drills. First plough and harrow the ground, as if for corn or potatoes; run furrows in one direction, with one horse, about three feet apart; with a hand-basket of corn on the left arm,

walk rapidly along-side the furrow, strewing the seed with the right hand, at the rate of about fifty grains to the foot, which will be about two bushels and a half to three bushels per acre. A little practice will enable any one to do this evenly and expeditiously. The seed may be covered in the best manner, by means of a one-horse harrow, a one-horse cultivator, or a two-horse harrow, passed lengthwise with the furrows. Two men will thus put in five or six acres in a day.

"The only subsequent culture needed, is to pass a one-horse cultivator between the rows, when the corn is about a foot high. No hoeing is required. Its growth will soon cover the whole ground, and all weeds, no matter how thick they may be, will be completely smothered and destroyed; and when, at the close of summer, the crop is removed, the ground will be left as smooth and clean as a floor. No crop have I ever seen equal to this, for reducing grassy, weedy soil, into mellow condition, in a single summer.

"If the crop stands erect, it is most conveniently cut with a stiff scythe. A little practice will enable the workmen to throw it all in an even swath, with the heads in one direction, so as to admit of easy binding in bundles. If much thrown down by storms, it must be cut with a corn-cutter. When bound, it is to be put up in large, substantial shocks, to stand several weeks, or till winter, unless the ground is to be sown with wheat, in which case the crop must be deposited to dry elsewhere.

"Every beginner spoils his first crop, by its *heating in the stack*. Even after drying several weeks, there is moisture enough in the stalks to cause violent fermentation. The only mode of preventing this disaster, is either to leave the shocks on the ground till winter, or to build very small stacks, with three rails placed upright together at the centre, for ventilation, and applying plenty of salt.

"Fodder thus grown, and well cured and salted, is greatly preferred, by cattle, to hay. A neighbor thinks three tons are as good as four tons of good hay. It should be grown so thick, that the stalks will be quite small; then they will be wholly eaten by cattle, and none lost.

"I have tried different quantities of seed per acre, and find that a much less rate than about three bushels, is attended with a diminished crop, although the stalks may be taller. One bushel per acre, will yield but little more than half as much.

"I usually obtain, on land that will yield thirty or thirty-five bushels of corn per acre, from four to six tons per acre of dried fodder. Counting all expenses, including interest on fifty dollars per acre for the land, the dry fodder, as an average for five or six years past, has cost me about one dollar and a half per ton. Hay is usually sold here for six or seven dollars a ton, and sometimes for ten. Yet it is astonishing how reluctant our farmers are in adopting the corn fodder cultivation. I hope the farmers of Michigan may set a better example of economy.

"The best variety of corn appears to be that which will afford the greatest number of stalks to the quantity of seed sown.—Coarse fodder is not as good as fine. A rather moist soil is best, as immense quantities of moisture are thrown off by such a mass of leaves.

"Besides the cheapness of this crop, and the great ease of its cultivation, it possesses the following advantages: 1. It may be sown after the hurrying work of spring is accomplished, or at the end of spring, or early in summer. 2. It may be harvested after the wheat and hay crops are secure, or during the comparatively leisure season at the close of summer. 3. Not yielding any grain, it does not exhaust the soil, and is, perhaps, the best crop to precede wheat. 4. It is an admirable crop for smothering and destroying weeds and grass.

"A brief glance at the advantages of this general cultivation of this crop, may not be out of place. The value of the annual hay crop in the United States, is about one hundred millions of dollars. Those who have already adopted the corn fodder crop winter their cattle at less than half the former expense. Would it, therefore, be extravagant to believe that one-quarter the present expense in the use of hay throughout the country, would be saved by its general use? Yet one quarter about twenty-five millions of dollars year—enough to endow agricultural schools and build railroads, by the score—and well worthy of some exertion for its introduction at large. T."

TO FARMERS.

THE subscriber has for sale Bambridge Superior Wheat Fan, Ruggles & Co Horse Rake, Improved Yellow Ruta Bag White Flat Summer and Red Top Turn Seed, Long Green and Long Prickley Cucumber Seed, Yellow and Black Cow Pea.

July 28, 1851—1t

WM. PALMER.

TO AGRICULTURISTS.

MORRIS & BROTHER have received the following valuable Books, pertaining to Agriculture:

Elements of Scientific Agriculture, or the Connexion between Science and the Art of Practical Farming. This was the prize essay of the New York State Agricultural Society; by J. P. Norton, M. A.

Elements of Agricultural Chemistry and Geology; by Jas. F. W. Johnston.

American Agriculturist, for the Farmer, Planter, Stock Breeder, and Horticulturist; by A. B. Allen; numerous plates. The 8th and 9th volumes of this most valuable work are received, also complete sets. Every farmer would have this work.

American Farm Book, on Soils, Manures, Drainings, Irrigation, Grasses, Grain, Roots, Fruit, Cotton, Tobacco, Sugarcane, Rice, and every staple product of the United States.—This is a perfect farmer's library, with upwards of 100 engravings; by R. L. Allen.

Farmer's Manual, with the most recent discoveries in Agricultural Chemistry; by F. Sautkner.

A Muck Manual for Farmers; by S. L. Dana.

Farmer's Land Measurer, with a set of useful Agricultural Tables; by Jas. Pedder.

American Husbandry.—Series of Essays on Agriculture, with additions; by Gaylord and Tucker.

Farmer's Encyclopædia; by Cuthbert W. Johnson.

Productive Farming, with the most recent discoveries of Liebig, Johnston, Davy, and others.

European Agriculture, from personal observation; by Henry Coleman. This is a very popular work.

Johnson's Chemistry and Geology, with their application.

Johnson's Dictionary of Gardening; by David Landreth.

London's Gardening, for Ladies; by A. J. Downing.

Square's Agricultural Chemistry, Bonssaint, Rural Economy, Buist's Kitchen Gardener, Landscape Gardening, and Rural Architecture; by A. J. Downing

Pessenden's American Gardener.

American Fruit Book, with full instructions; by S. W. Cole.

Downing on Fruit Trees.

Theory of Horticulture; by Lindley.

Florist's Manual; by H. Bourne; 80 colored engravings

Bridgman's Kitchen Gardener.

In addition to which, Morris & Brother have of the late Works on Agriculture, Horticulture, and Raising Stock, of any celebrity.

Richmond, March 12, 1851.—ly

NEW STYLE MEDALLION DAGUERRETYPES IN COLORS.



This splendid improvement must be seen to be appreciated. Our friends are invited to call at the original VIRGINIA SKY-LIGHT DAGUERREAN GALLERY, where may be found all the latest improvements, consisting of the CELEROTYPE, by which infant children may be taken in one second;

TALBOTYPE, or Daguerreotype on Paper, and

HYALOTYPE, or Daguerreotypes on Glass, which, with every other improvement, may now be obtained at the Gallery, No. 139 Main street, above Governor.

N. B.—Their NORTHERN COMBINATION SKY LIGHT is now open in full operation—it is the largest in the State.

WM. A. PRATT & CO. Proprietors.

MEDALLION DAGUERREOTYPES IN COLORS.—We have inspected the above style of Daguerreotypes, lately and so successfully introduced here by Messrs. PRATT & Co., 132 Main street. By this process, a relief almost magical, and a variety highly pleasing, is obtained. In some cases, the picture so closely resembles an enamelled miniature, in its ivory tone, as to deceive even an artist; in others from the midst of a dark background, appears the "human face divine," in all the vividness of life; then, by still another process, the picture appears entirely upon a brilliant white ground, surrounded by wreaths of flowers. But, we feel our inability to do full justice to these beautiful medallion Daguerreotypes, and must, therefore, request the curious in such matters to call and judge for themselves. Messrs. Pratt & Co. claim to be the first to introduce the sky-light system into the State, and appear to be constantly inventing something for the improvement of the art. Repair to their gallery and "secure the shadow ere the substance fades."—*Richmond Times.*

WILLIAM P. LADD,

APOTHECARY AND DRUGGIST,

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DEALER in English, Medierranean, India and all Foreign and Domestic Drugs and Medicines; also, Paints, Oils, Varnish, Dye Stuffs, Window Glass, Puty, &c. For sale on the most accommodating terms.

Orders from Country Merchants and Physicians thankfully received and promptly attended to.

ja 1851—lf

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COMMERCIAL RECORD.

WHOLESALE PRICES CURRENT,

Reported for the Southern Planter by

NANCE & GOOCH, COMMISSION MERCHANTS.

TOBACCO—The inspections for the month of June, although large, have not equalled the corresponding month of last year. Prices have been well maintained during the month, with an occasional dullness in sales, which, however, soon rallied again. We do not notice any material alteration since the late rains. Sales were made yesterday with more difficulty, yet prices were fully sustained. We quote Lugs \$2 50 to \$6 50; Leaf \$7 to \$12 50; general sales Fair Leaf at \$8 to \$9 50; very Fine Manufacturing kinds at much higher figures; Fair Stemming \$10 to \$11.

WHEAT—None in market—millers expect the market to open at \$1 per bushel.

BACON—Virginia cured 10½ cents; Baltimore sides 9½ cents.

SUGAR—Porto Rico 6½ cents to 7½ cents; New Orleans 6 cents to 7½ cents.

Richmond, June 26, 1851

NOTICE TO FARMERS.

THE RICHMOND AND PETERSBURG RAIL ROAD COMPANY respectful inform farmers living on the Roanoke River and on the line of the Raleigh and Gaston Rail Road, that they are transporting tobacco and other produce between Richmond and Petersburg with promptness and despatch, running daily trains of eight wheel covered cars securing tobacco and goods from damaged Tobacco consigned to the care of J. Lynch Rail Road Agent, Petersburg, will be forwarded, free of commissions, to Richmond Goods purchased in Richmond and consigned to the Rail Road Agent at Gaston will be forwarded up the river without charge for forwarding.

THOS. DODAMEAD,
Supt' R. & P. R. R.

June 24, 1851—tf

FOR SALE,

20 BUCK LAMBS of the *Cotswold*, a *New Oxfordshire* Breed, deliverable in Baltimore after 1st of August proximo.

For several years past, great care has been given by the subscriber to the selection of his Breeding Ewes, part of which, and the Ram have been selected from the Celebrated Flock of Clayton B. Reybold, Esq. of Delaware.

Price \$15 to \$20, according to choice.

For further particulars inquire of S. Sand Editor of the "American Farmer," Baltimore or

HENRY CARROLL,
Westermans' Mills, P. O. Baltimore Co. Md.
je—3t

AGRICULTURAL WAREHOUSE.

THE Subscriber continues to manufacture Agricultural Machines and Implements such as Horse-powers, Threshers or Drums Fan Mills, Straw Cutters, Corn Shellers, variety of patterns, Hill Side and Subsoil Ploughs, Corn and Cob Crushers, Cultivators Harrows, &c. all of which will be made in the best manner, and after the most approved patterns. My Horse-power has been tested two seasons, and uniformly pronounced to be the best in use. Machines repaired in the best manner. Castings in iron and brass furnished at short notice.

H. BALEWIN,
je—3t 148, Main St. Richmond.

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STOCK Cattle of all the different breeds Sheep, Swine, Poultry, &c. will be purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged. Apply to

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Refer to Gen. W. H. Richardson, Richmond, Virginia.

N. B.—All letters, post-paid, will be promptly attended to. ap—tf



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