

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.*

FRANK: G. RUFFIN, EDITOR.

P. D. BERNARD, PROPRIETOR.

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For the Southern Planter.

LIMIT OF IMPROVEMENT FROM THE USE OF MARL.

IN REPLY TO MR. NEWTON'S REVIEW, &C.

Mr. Editor.—In the very able and interesting review, by the Hon. Willoughby Newton, of the Essay on Calcareous Manures, which appeared in the May number of the Planter, I notice an opinion stated which I think calculated to do harm to the progress of improvement, at least in our low country. It is this: "We believe there has been no instance in Virginia or elsewhere, nor do we think it possible that there can ever be one, of the product of any naturally poor farm being brought up to an average on entire fields, from year to year, of more than ten bushels of wheat and twenty bushels of merchantable corn to the acre, by calx alone, however long continued, though the operation be aided by the use of all the putrescent manures that could be produced on the farm, and by plaster, clover and peas, and the best possible rotation." These views are altogether opposed to our belief and experience hereabouts, and coming as they do from a gentleman who is a most successful practical farmer, and who deservedly has great influence with the agricultural community, they require further examination.

Mr. Newton admits the above assertion to be a strong one, but says that such a farm has certainly never come under his observation, and quotes the case of the Coggin's Point farm (the improvement of which as shown by the increased crops is treated in the Essay,) in support of his position.

He thinks this farm supports his position, 1st. Because a portion of it at least consists of originally rich land; 2d. The improvements were made to a considerable extent by eocene marl, which he thinks equal to a combination of calx and guano; and, 3dly. Because the average of crops of wheat for the first fifteen years of marling was 8.22 bushels per acre, and during the last series of sixteen years was 12.10 per acre. I will concisely notice these reasons in the order in which they occur.

1st. This farm does contain a small amount of what was originally good land; but so little that it constitutes only one-half of one of our present six fields, or about one-twelfth of the

arable land, and does not in my opinion counterbalance the desperately washed and gullied slopes as found throughout the farm before marling. Even this small portion of originally rich land had been so exhausted that a gentleman, who was an intimate friend and neighbor, when he heard that this farm had been left to my father, pronounced it a curse to any man who might inherit it.

2d. The eocene marl on the farm is found immediately on the river bank, and has been from its vicinity applied alone to the field containing the little originally good land. The great improvement on all the originally poor acid soils has been effected entirely with miocene—and this improvement, without doubt, exceeds Mr. Newton's maximum effect of marl.

3d. The average crop of wheat per acre for the six years preceding marling was 6.75 bushels per acre, and that on the *best portions* only of the fields, at least one-half the arable land being considered even at that time too poor for wheat culture, and accordingly omitted. I might add that all the putrescent manures, which an active and zealous farmer could make and apply, were necessary for even this poor return. The average crop of wheat for the last twelve years, viz: from 1841 to 1852 inclusive, was 13.60 per acre, and that on *all* the arable land, exceeding Mr. Newton's estimate of maximum product by 3.60 bushels per acre. (It is more than probable that were the comparison confined to the portion of the farm cultivated in wheat before marling, the product would be found to be three or four times 6.75 bushels per acre.) This series of years includes three in which the crop was greatly curtailed by serious disasters—one year by a late frost in April, which cut down all the fallow and the most forward parts of the corn-field wheat; another by a wet spell, in which it rained almost every day during the harvest operations, and some days all day long, causing the wheat to sprout as it stood in the field; and a third, when the effects of Hessian fly exceeded any thing I have ever witnessed before or since. Our crops are frequently subjected to these heavy losses, which when they occur, greatly reduce the *average* for a series of years, and thus *apparently* diminish the capability of the land. This capability, I conceive, may be exhibited by the crops of single years, when no unusual means have been used. I

have had an average of twelve bushels of wheat after corn, of twenty after clover, and of thirty-five bushels of corn on entire fields—originally poor acid lands brought about solely by the use of miocene marl and the partial manuring which the resources of the farm enabled us to do.

But why, it may be asked, were not these crops, or the above average of 13.60 bushels of wheat per acre sooner attained? I admit that the progress of improvement on this farm has been slow and in some cases unnecessarily expensive, and that we have not attained so large an average as we ought to have reached. By turning to chapter XXI of the last edition of the Essay, I think this question is there sufficiently answered to satisfy any one just beginning the system of marling that he can now do greatly better than has been done on the Coggin's Point farm. The author states as causes of his slow rate of improvement, 1st. The badly washed and galled state of the land when he received it, on many and extensive slopes, all the soil having been carried away; 2d. The fact that he had everything to learn about marling and "to prove by actual trial, without any light from either experience or the prior or cotemporary operations of other farmers, much of his labor was lost uselessly in wrong procedures, or was worse spent in excessive applications of marl, which subsequently proved to be injurious." As late as 1839, twenty years after the beginning of his marl labors, one of the best fields I now have for corn had been omitted under corn culture for eight years or more, on account of too heavy a dressing of marl, and some limited parts of the farm have not entirely recovered to this day; 3d. "The finess given to the before acid soil by marling, to produce clover, was not found out until several years after that best auxiliary to the first improvement ought to have been in full use;" 4th. The want of sufficiency of labor for both manuring and marling; 5th. The culture of cotton for five successive years on all the best land, to its detriment; and lastly, The want of the personal attention of the owner, who for twelve years, from 1827 to 1839, did not reside on the farm. The importance of this last cause every practical farmer will at once appreciate. I will farther add as an additional reason the fact that this farm lies in the fork between the river and Powell's creek, and is intersected by numerous wooded ravines making up from both. The margins of every field are thus most seriously affected by shade, and the general average of crops reduced thereby. In later years, too, the crops, both of wheat and corn, have fallen below the actual capacity of the land, on account of the presence of two vegetable pests, which I admit after a hard struggle of more than a dozen years, I have been unable to subdue. My fields are thoroughly infested with wiregrass and partridge pea, the former a great impediment to the proper culture of corn, the latter very inimical to the successful growing of wheat. The part-

ridge pea comes up in the fall about the time we are sowing wheat, and the only way that I know to diminish it, even for a single year, is to permit the pea first to vegetate and then destroy it in the process of getting in the wheat. This requires late sowing of the wheat, and can only be done at great risk to the crop. At this time, (the middle of May,) I can observe a marked superiority of the wheat sown in October over that sown in November, and yet I am compelled by the partridge pea to sow my fallow wheat—the fallow, too, the main chance for a crop—in November, a time too late for the best yield.

I have thus given the reasons, why I think the Coggin's Point farm, even with its slow rate of improvement, does not authorize so low an estimate of the maximum effect of calxing, with the usual aids of manure and green crops. I come now to the more agreeable duty of showing what has been actually done by a few of my neighbors. I shall limit myself to four or five cases, two of which are those of gentlemen I happened to meet just after reading Mr. Newton's review; the others are facts collected some two years ago for another purpose.

1. On the stage road from Norfolk to Petersburg and within about five miles of the latter, immediately on the ridge between James river and Black-water, is situated a farm of several hundred acres which a few years ago was remarked for its extreme poverty. This land was originally acid poor land, growing pine and whortleberry. Mr. Birchett, its present owner, in reply to my queries, says

"I purchased my farm in 1845. It was in a very dilapidated condition. There were only about 100 acres of open land. The plantation had been cultivated so badly that all the rest had been turned out and had grown up in small pines. In 1845 I cultivated 30 acres in corn and made 35 barrels. I then sowed ten bushels of wheat on the best part of the land and made 27½ bushels. The next year, 1846, I cultivated in corn likewise 30 acres, 17 of which I had marled. The 30 acres brought me 75 barrels of corn, and I sowed the 17 acres marled in wheat. The yield was 120 bushels of wheat. I now have my farm in five shifts, with about 60 acres to the shift. The shift I had in corn last year (1852) was entirely marled over at the rate of 300 bushels to the acre. The 60 acres made 300 barrels or 1500 bushels of good corn. I sowed peas broadcast at the time of laying by the corn and put it in wheat the same fall. The wheat now promises well. The smallest estimate put on it by any of my neighbors is a yield of 15 bushels per acre, although it has been somewhat damaged by fly. The turn-out of my wheat crop for the last two years, 1852 and 1851, was 12 bushels per acre. My force being too weak both for manuring and marling, not much manure was applied, so nearly the whole improvement has been from the use of marl."

The marl used by Mr. Birchett was miocene—got with difficulty, lying below water, and hauled some distance.

2. Dr. Dupuy, who resides on the originally poor highlands to the south-west of Petersburg, writes:

"I purchased my farm in 1837. It was poor in the extreme. The last portion of land to which marl was applied, and that to which your inquiries are directed, was marled in 1842. At that time it was covered with poverty grass and dew-berry vines. I do not think it would have produced more than one and a half or two barrels of corn to the acre, nor more than three bushels of wheat. Indeed no man in his senses would have put it in wheat. I used putrescent manure raised on the farm, moderately applied, owing to its scarcity. The field in question never had an application of guano on any portion of it till this year. I was compelled to cultivate, in not more than three, and often in only two shifts, owing to the want of arable land for my force, thereby depriving myself of the advantages to be derived from clover. In 1851, I reaped my *first* and *only* fallow wheat from this field. The yield was within a fraction of twenty bushels to the acre. Two years before it had produced about sixteen bushels after a corn crop which it was supposed would have measured seven barrels. It is again in wheat after corn, with a light application of guano, and promises to make 15 or 16 bushels."

I regret that Dr. Dupuy's occasional use of guano on the rest of his farm, prevents my citing the very great improvements from marling which he had made, despite his hard cropping and slight use of clover.

3. Col. R. M. Harrison, who has greatly improved his land, says, "My average crops, before marling, have been about fifteen bushels of corn and six of wheat on the *best* of the land, about one-third of the field being considered too poor for wheat, and consequently left out. My actual crop of good corn in 1850 was 2,000 bushels, or between twenty-two and twenty-three bushels per acre; and in 1851, 2,300 bushels, being twenty-five bushels per acre. My crop of wheat in 1850 was about 1200 bushels, being eleven and a fraction bushels per acre; in 1851, 1150 bushels, or thirteen bushels per acre—all the land being now put in wheat except two or three acres."

4. Mr. H. W. Harrison states, "Before marling, my land brought fifteen bushels of corn and six of wheat per acre. In 1840, I made 300 bushels of wheat on my field of fifty acres—six bushels per acre. In 1851, my crop of wheat was rather over twelve and a half bushels per acre."

5. Mr. E. A. Marks states, "Before marling, my land brought fourteen bushels of corn and five bushels of wheat per acre. In 1850, my crop of corn was 525 barrels, or over twenty-one bushels per acre; wheat, 1320, or twelve bushels per acre. In 1851, 535 barrels of corn, or twenty-two bushels per acre; wheat, 1393

bushels, or 13.65 bushels per acre." Good merchantable corn is meant—the refuse corn of the above crops not taken into consideration.

The last three gentlemen all own lands which are high ridge lands, and were originally poor acid lands. They deserve great credit for their improvements, which they have effected in comparatively a short time, with miocene marl, aided partially by putrescent manure. I say *partially*, because, like nearly all the rest of us, their force was limited, and they did not have enough labor to marl, manure and make their crops. Where all could not be done, they preferred neglecting what was deemed at the time the least important. But the foundation having now been laid, by calxing the soil, I hold the great improvement, on these and most other of our farms, is yet to be built up by the making and applying putrescent manures, by the use of plaster, by sowing peas and clover, by a *proper* system of grazing, and by adopting a more extended system of rotation.

With the above facts before me, I think I am warranted in differing with Mr. Newton as to the maximum limit of improvement of poor lands to be effected by the use of calx and the ordinary resources for manuring. He would put that limit at twenty bushels of corn and ten bushels of wheat per acre. I would put it at thirty bushels of corn and eighteen bushels of wheat, to be reached in three courses of crops, of five years each, provided the improvement be conducted by aid of all the lights we now have, and with judgment and skill. Not half the land that has been marled in lower Virginia has had half a chance. Our farmers, originally as poor as the soil they cultivated, were in debt, and with the first appearance of increased fertility of soil, they were in a measure forced to take additional crops from it: But our people have now generally, by the aid of marl, worked out of debt; in fact, many are rich, whose fathers were poor, and I look forward to more rapid improvement in our lands. This, I verily believe, would, to a great extent, be effected merely by more leniency in its cultivation; but would, of course, be greatly advanced by more extensive manuring, &c.

I would not be understood as discarding the use of guano. On the contrary, I think Mr. N. has rendered an important service to the community in giving his practical directions for the improvement of poor lands. Such improvement is difficult enough to induce us to use all the means with which a kind Providence has endowed us. I have always advocated light dressings of marl and lime, to be repeated as occasion required, and I have no doubt that guano is an important auxiliary in the good work. My own experience in its use is very limited, this being the first year that I have used it on wheat, (and certainly it does not now promise to pay expenses,) but I have heard doubts expressed by practical men hereabouts and those who have used it—1st. Whether it will pay on lands which have reached

twelve or fifteen bushels per acre; and 2d. Whether it ought to be used on lands containing much vegetable matter, on clover fallows for wheat for example. If these views be correct, they would materially interfere with the progress of improvement promised by Mr. N. after the two first rounds of crops.

While, therefore, I would use guano in the early stages of the improvement, I would in its progress rely more particularly on putrescent manures of the farm, on clover, peas and plaster. I am somewhat surprised that Mr. N. in his practical directions omitted to recommend the use of plaster. After the land is limed and set in clover, so impressed am I with the importance of the use of plaster that had I to choose to-day between guano, at a cost of four dollars per acre, and plaster, at fifty cents per acre, I should undoubtedly take the latter.

In conclusion, permit me to say, Mr. Editor, that it is with no small degree of diffidence that I find myself differing with Mr. Newton on any point of practical farming. I read his review with the greatest pleasure, and I hope with profit. One of the benefits to the cause of agriculture, to which the Essay may hereafter lay claim, will be the having elicited Mr. Newton's review.

E. RUFFIN, JR.

For the Southern Planter.

NOTTOWAY AGRICULTURAL CLUB.

Mr. President.—At a previous meeting of our Club, the following subject for discussion was selected:

"What changes should we make in our present system of farming, and what system is advisable for us to pursue—having in view present profits and the speedy and permanent improvement of our farms; and also having in view the peculiar adaptation of our climate and soil to the production of our present great staple, tobacco; and our expected low rate of transportation of that and other products to market?"

The subject is too comprehensive to be treated in all its bearings, with the minuteness it deserves, in a paper like the present, the object of which is only to make some suggestions to facilitate the change from one system to another—a transition frequently readily assented to in theory, but often presenting obstacles in the practical operation sufficient to deter many from the attempt—from one you have unanimously condemned, to the one a large majority of the Club have approved. The question recited above would be covered by the following: What system of cultivation would be best adapted to the improvement of our farms? 2d. What crops would be most profitable on that system?

The first has been so fully and ably discussed

in our Club that I will not reiterate the arguments used on previous occasions, but consider it as settled, by a large majority of you, in favor of the "five field system." That being agreed upon, the next important point is how to effect the change from the "three field" (the one in general use) to the "five." The important difference between them, as their names indicate, is the number of fields in cultivation, and consequently the relative size of the "fields" in the two systems. The difficulty at once presents itself to the farmer, "that if it requires one-third of his cultivated land to produce a sufficient supply of corn for home consumption, (which is generally the case,) how would he be able to get on with the product of one-fifth, at least for a short time, until he might expect some improvement in the land from the system he was adopting?" If he could bear the loss of a portion of the crop for a few years, or manufacture manure to make up the deficiency, the difficulty could be very easily gotten rid of; but, unfortunately, he frequently cannot submit to the first, and he requires all the manure he can collect for a tobacco crop, to meet his necessary expenses. The alternative is therefore presented to him of following the old system by which he can, for the present, at least, manage to pay expenses, or try a new one which necessarily brings debts accumulating for several years, and looks to future years for its profits; then probably to be delayed longer by unfavorable seasons and low prices. Thus many who would give their assent to the ultimate success of the theory, from present difficulties or extreme prudence are prevented from carrying it into practice. The plan I am about to suggest I think will lessen these difficulties, both by causing less risk of curtailing his crops—necessary for home consumption—and requiring a moderate and short loan to establish him safely, and in a short time, on the improving and more productive "five field system." The intermediate step by which I propose to accomplish this is the four field system, with some modifications—thus, "to begin with corn the first year; the second year half of the corn field of the previous year to be seeded to wheat, and the other half to oats, with one hundred and fifty pounds of guano per acre; the last to be fallowed as soon as the oats are taken off—one hundred pounds again applied and seeded to wheat, together with half of the corn field of the present year. So that each year one-fourth will be in corn, one-fourth in wheat, one-eighth in oats and three-eighths in grass—one-fourth for two years and one-eighth for one year." I will now compare it with the other systems. It has one-fourth less in corn than the three field; but saves one-fourth of the labor, which if applied in collecting material for compost, &c., and better cultivation, will reduce the deficiency at least to one-eighth. A full compensation for which would be found in the oat crop, which (a good season) would be at least double. Usually on the three field

system about three-fifths of the corn land is seeded in oats—on this, one-half; but the addition of the guano would make the half, at least, double the three-fifths, (I have oats at this time with one hundred and fifty pounds guano, which I think will make five times the quantity the land would have made without,) and more than equivalent to the deficiency of one-eighth of corn. The quantity of land in wheat would be about the same the first year. The second year the surface in corn and oats would be the same, and the wheat would be double. The wheat on the oat fallow might, with great certainty, be expected to pay for both applications of guano. I last spring applied one hundred and forty pounds of guano per acre for tobacco (by miscalculation,) and again one hundred pounds last fall, when it was seeded in wheat, which at this time looks as well as corn land, on which I applied two hundred pounds at time of seeding, and promises well to pay for the two hundred and fifty pounds of guano and more wheat than the land would have made before it was put in tobacco. The only outlay would be the loan of the cost of guano, which would be returned with probably a handsome profit, by the additional wheat, straw, grasses, &c., and a rapid improvement of soil. Although only one-eighth would rest two years, yet I consider the double application of guano fully equivalent to one year's rest. If there should be a difference between the two portions, they might be changed at each rotation. Grazing on this system would be limited to the portion rested two years, except the gleanings of the wheat field by hogs. A great advantage over the three field system is the opportunity of seeding clover, herdsgrass, &c., for hay and improvement. Compared with the four field system, as at present adopted, it has the advantage of one-eighth more land in cultivation, which doubles the crop of wheat; the other crops being about the same, and is fully equal to it for improvement. Compared with the five field system, it has one-fifth more in corn and one-fifth more in oats; but one-sixth less in wheat, and superior to it for rapid improvement. To give a better comparative view, I have arranged them in tabular form—taking a farm of three hundred acres of cultivated land.

	Corn.	Wheat	Oats.	Grass.	Grass.
3 field system,	100	40	60	100	corn.
4 " " "	75	37½	37½	75	75
4 " " imp'd.	75	75	37½	37½	75
5 " " "	60	90	30	60	60

The transition from this to the five field, after a few rotations, could be effected without inconvenience, as the improved condition of land would allow the requisite reduction of surface, and yet give an excess in the product of corn, oats, &c., over the three field system.

2d. This system would not interfere with the tobacco crop, except so far as the small quantity of fallowing would do. The tobacco lots might be kept up without necessarily deranging any part of the system, and the size of crops regulated, as it would probably be under any system, by the market value. The wheat crop would be very much increased and soon equal the tobacco in value, thus giving the farmer two staples of about the same value to protect him against the loss which either might suffer from season or price. Corn and oats, after a few rotations, would have to seek a market, thus giving the farmer four in place of one crop to meet the market fluctuations. The increased quantity of hay, straw, &c., rapidly augment the manure heaps, and the farmer soon finds that he cannot only make enough for tobacco, but that his summer manure may be spared for wheat, and a portion of the winter to dress the thin spots in his corn field.

Respectfully submitted,

WILLIAM S. HARRIS.

May 20th, 1852.

From the Michigan Farmer.

MANURES.

As most of our farmers probably have the manure of last year still lying in their barnyards, a few words on the subject may not be inappropriate. That a man can make nothing out of nothing, is so plain a proposition, that it appears almost childish to state it; and we believe it to be equally true that a very large proportion of those who depend upon agriculture for their living, are continually making the vain endeavor to accomplish this exploit. The end of all farming is to produce from the earth grain, roots, or flesh, for the use of mankind. Now, of all subliminary things, this earth is one of the most liberal, patient, and long suffering under ill treatment; but even it finds an end to its forbearance, and has a limit to its liberality. Or, to speak seriously, of what are plants and animals composed? Chemistry teaches us that they all consist of a few gases, and a few more tangible elements, such as potash, soda, lime, sulphur, phosphorus, chloride, &c.; the former of which are partly derived from the air, but the latter entirely from the earth. Now, the stuff we call soil is nothing else than clay, sand, a little decayed vegetable matter, and the inorganic elements above mentioned. Clay, sand, and rotten wood, while they remain in that state, serve no other purpose in vegetation than to hold the plant, give it a seat for its roots, and to some extent serve as a sponge to drink in gases and water. They do not enter into the elements of plants, except in a very minute degree. All the virtue which the soil possesses in making plants grow, resides in the elements,

or inorganic materials and gases; and just in proportion as they are abundant or deficient, the crop is large or small. Omit one or two of these elements and no grain whatever can be produced. Give them an abundant and full supply, and the grain can scarcely fail to be good. This is the whole secret of rich and poor land. The former is full of the raw material of plants, which the roots manufacture into grains; the latter has a very small quantity; and as a woollen manufacturer can only make a limited number of yards of cloth out of one bale of wool, so the seed sown can only return a very few seeds more. One of the ends of manure, therefore, is to fill the soil with these elements and gases. All animal manure has been grain or grass; in the animal they undergo a change which renders them richer—that is, alters their infinities, makes them better adapted to the use of the plant, and more readily taken up. *This is all.* But every good farmer knows that his manure is valuable, on the contrary, just in proportion to the food that the animals have consumed. Wheat straw contains a very limited quantity of these elements; linseed a very large quantity; and consequently, in England, where this subject is thoroughly and *practically* understood, the farmers go to vast expense every year to purchase cake, *not* to fatten their cattle, but to make rich manure. With them, one load of such dung is worth a dozen of our washed-out, sun-scorched, rotten straw. In the same way, clover ploughed in, plaster, ashes, &c. supply one or more elements in which the land is deficient.

But a few years ago, the celebrated Professor Daubeny, of Oxford, discovered another principle upon which the value of manure depends. In the Botanical Garden under his care, were two beds—one which had remained unmanured for many years, and was very poor; another which was constantly manured, and was very rich. He analyzed the soil of each, and to his surprise found scarcely a perceptible difference in their composition and chemical qualities. *How could he account for this?* Only in one way. Although the soils were actually alike, the elements were in different conditions. For instance, in the rich border there was no more sand or *silica* than in the other, but it was combined with the potash, which rendered it soluble in water and able to be taken up by the roots; while in the poor soil both elements were insoluble and hard, and the roots could not receive them, and thus with all the other requisite elements. Thence he deduced the principle, which further experiments have proved to be absolutely true that the difference between new and worn-out lands does not so much consist in the *absolute deficiency* of these elements, as in the want of them in a *soluble liquid state*. For instance, when we break up a piece of new land, all these elements are ready for use, and we get a large crop. Each crop, however, carries them away faster than nature can dissolve them, and at last the

land is "worn out." Put the field then down to pasture for a few years. It receives nothing but what has sprung from it, therefore no increase; but the air, the rain, the carbonic acid gas and nitrogen have gradually dissolved a larger portion than the pasture grass could take up, and the next crop is again a good one. In this respect, then, manures have a different action. In the first mentioned case, they directly supply elements ready dissolved for the roots to feed on. In this case, they act chemically, by rapidly dissolving the elements naturally existing in the ground, and adapting them to the plants. In one year they may dissolve as much as nature would in ten. Such manuring is *cooking the food*. A raw potato is not only a very nauseous, but a very unwholesome food. It contains properties almost poisonous to man. But cook it; the heat changes these properties, and it becomes a delicious and nourishing dish. In this way mineral manures, such as lime, plaster, ashes and salt, chiefly work; but we are also authorized to believe that even barn-yard manure has the same effect, but to a more limited extent. And this explains a fact which took the Connecticut farmers by surprise, when plaster was first introduced among them some years ago. Its natural effect was to increase the crop; and never having learned chemistry, those persons kept plastering heavily, and reaping great benefit, but putting on no other manure. They thought that plaster was itself a *manure* like dung. In a few years, therefore, to their dismay, they began to find their land more sterile than ever, and had to return to barn-yard manure. What had they done? They had put their soil in the *pot* and *cooked it*. The plants eat heartily and grew fast and thick on such good cheer; but they soon eat up all their food and then began to starve. *Let our Michigan farmers beware of this.* Clover brings up elements from the subsoil, and grows rapidly when stimulated with plaster, and in effect, throws the riches of the subsoil on the surface. But the subsoil is no more inexhaustible than the top earth—and if wheat follows wheat, with a mere clover and plaster crop between, the same result must inevitably, though not so rapidly, occur. Virginia is worn out, but only on the top—and many a northern farmer buys lands apparently worthless, puts in a subsoil plough, and reaps the benefit of a new soil, with any manure that the land may ever have received.* But if we wear out our *subsoil*, as a harassing course of wheat, plaster and clover inevitably must do; if we apply no other elements, as barn-yard manure, or potash, or lime, or phosphoric acid, renovation of the land is hopeless. At the time of the Revolution, the lands round Albany, New York, averaged forty bushels of wheat to the

*The northern farmers in Virginia form the most inconsiderable part of the class in Virginia; and by no means the most useful in proportion to numbers.—ED. SO. PL.

acre. A farmer now thinks himself lucky if he gets seven; and miles of land once as rich as earth ever presented, are now a wilderness of scrub birch and pine, and the Paradise of the land speculator. It is a sad prospect; but what is to keep our light lands in the interior from the same fate? Professor Johnston says, "If we plough-in only the vegetable matter which the land itself produces, and carry off occasional crops of corn, the time will ultimately come when any soil thus treated will cease to yield remunerating crops. Though by skilful green manuring, waste land may be brought to a remunerative state of fertility, it will finally relapse again into a state of nature, if no other methods are subsequently adopted for maintaining its productiveness. Indeed, we consider the reckless use of clover, plaster and wheat, however profitable at the moment, as the most entire spendthrift system. Virginia consumed the interest, and there stopped; we are consuming principal and interest together, and leaving nothing at all for our heirs.

"Be wise in time—'tis folly to delay!"

TAMING THE HONEY BEE.

We take the following article from the Germantown Telegraph, which extracts it from some sheets of a work on bees now in course of publication by the Rev. L. L. Langstroth, of Greenfield, Massachusetts. If the rest of the book is as sensible as what we insert below, bee-keepers ought to have it.

THE HONEY BEE CAPABLE OF BEING TAMED OR DOMESTICATED TO A MOST SURPRISING DEGREE.—If the bee had not such a necessary and yet formidable weapon, both of offence and defence, multitudes would be induced to enter upon its cultivation, who are now afraid to have anything to do with it. As the new system of management which I have devised, seems to add to this inherent difficulty, by taking the greatest possible liberties with so irascible an insect, I deem it important to show clearly, in the very outset, how bees may be managed, so that all necessary operations may be performed in an apiary, without incurring any serious risk of exciting their anger.

Many persons have been unable to control their expressions of wonder and astonishment, on seeing me open hive after hive, in my experimental apiary, in the vicinity of Philadelphia, removing the combs covered with bees, and shaking them off in front of the hives, exhibiting the queen, transferring the bees to another hive, and, in short, dealing with them as if they were as harmless as so many flies. I have sometimes been asked if the bees with which I was experimenting, had not been subjected to a long course of instruction to pre-

pare them for public exhibition; when in some cases the very hives which I was opening contained swarms which had been brought only the day before to my establishment.

Before entering upon the natural history of the bee, I shall anticipate some principles in its management, in order to prepare my readers to receive, without the doubts which would otherwise be very natural, the statements in my book, and to convince them that almost any one favorably situated, may safely enjoy the pleasure and profit of a pursuit, which has been most appropriately styled "the poetry of rural economy;" and that, without being made too familiar with a sharp little weapon, which can most speedily and effectually convert all the poetry into very sorry prose.

The Creator intended the bee for the comfort of man, as truly as he did the horse or the cow. In the early ages of the world—indeed until very recently, honey was almost the only natural sweet; and the promise of "a land flowing with milk and honey," had then a significance, the full force of which it is difficult for us to realize. The honey bee was, therefore, created not merely with the ability to store up its delicious nectar for its own use, but with certain properties which fitted it to be domesticated, and to labor for man, and without which, he would no more have been able to subject it to his control, than to make a useful heast of burden of a lion or a tiger.

One of the peculiarities which constitutes the very foundation, not merely of my system of management, but of the ability of man to domesticate at all so irascible an insect, has never, to my knowledge, been clearly stated as a great and controlling principle. It may be thus expressed:

A HONEY BEE NEVER VOLUNTEERS AN ATTACK, OR ACTS ON THE OFFENSIVE, WHEN IT IS GORGED OR FILLED WITH HONEY.

The man who first attempted to lodge a swarm of bees in an artificial hive, was doubtless agreeably surprised at the ease with which he was able to accomplish it. For when the bees are intending to swarm, they fill their honey bags to their utmost capacity. This is wisely ordered, that they may have materials for commencing operations immediately in their new habitation; that they may not starve if several stormy days should follow their emigration; and that when they leave their hives, they may be in a suitable condition to be secured by man.

They issue from their hives in the most peaceable mood that can well be imagined; and unless they are abused, allow themselves to be treated with the greatest familiarity. The hiving of bees by those who understand their nature, could almost always be conducted without the risk of any annoyance, if it were not the case that some improvident or unfortunate ones occasionally come forth without the soothing supply; and not being stored with honey, are filled with the gall of the bitterest hate against all mankind, and animal kind in

general, and any one who dares to meddle with them, in particular. Such radicals are always to be dreaded, for they must vent their spleen on something, even though they lose their life in the act.

Suppose the whole colony, on sallying forth, to possess such a ferocious spirit; no one would ever dare to hive them, unless clad in a coat of mail, at least bee-proof, and not even then until all the windows of his house were closed, his domestic animals bestowed in some safe place, and sentinels posted at suitable stations, to warn all comers to look out for something almost as much to be dreaded as a fiery locomotive in full speed. In short, if the propensity to be exceedingly good-natured after a hearty meal had not been given to the bee, it could never have been domesticated, and our honey would still be procured from the clefts of rocks or the hollows of trees.

A second peculiarity in the nature of the bee, and one of which I continually avail myself with the greatest success, may be thus stated:

BEES CANNOT, UNDER ANY CIRCUMSTANCES, RESIST THE TEMPTATION TO FILL THEMSELVES WITH LIQUID SWEETS.

It would be quite as easy for an inveterate miser to look with indifference upon a golden shower of double eagles falling at his feet and soliciting his appropriation. If then we can contrive a way to call their attention to a treat of running sweets, when we wish to perform any operation which might provoke them, we may be sure they will accept it, and under its genial influence, allow us without molestation to do what we please.

We must always be particularly careful not to handle them roughly, for they will never allow themselves to be pinched or hurt without thrusting out their sting to resent such an indignity. I always keep a small watering pot or sprinkler in my apiary, and when I wish to operate upon a hive as soon as the cover is taken off, and the bees exposed, I sprinkle them gently with water sweetened with sugar. They help themselves with the greatest eagerness, and in a few moments are in a perfectly manageable state. The truth is, that bees managed on this plan are always glad to see visitors, and you cannot look in upon them too often, for they expect at every call to receive a sugared treat by way of a peace offering.

I can superintend a large number of hives, performing every operation that is necessary for pleasure or profit, and yet not run the risk of being stung, which must frequently be incurred in attempting to manage, in the simplest way, the common hives. Those who are timid may, at first, use a bee dress; though they will soon discard every thing of the kind, unless they are of the number of those to whom the bees have a special aversion. Such unfortunates are sure to be stung whenever they show themselves in the vicinity of a bee-hive, and they will do well to give the bees a very wide berth.

Apiarians have, for many years, employed the smoke of tobacco for subduing their bees. It deprives them at once of all disposition to sting, but it ought never to be used for such a purpose. If the construction of the hives will not permit the bees to be sprinkled with sugar water; the smoke of burning paper and rags will answer every purpose, and the bees will not be likely to resent it; whereas, when they recover from the effect of the tobacco, they not unfrequently remember, and in no very gentle way, the operator who administered the nauseous dose.

Let all your motions about your hives be gentle and slow. Accustom your bees to your presence; never crush or injure them in any operation; acquaint yourself fully with the principles of management detailed in this treatise, and you will find that you have but little more reason to dread the sting of a bee, than the horns of your favorite cow, or the heels of your faithful horse.

From the Albany Cultivator:

THE MINERAL MANURE THEORY.

ANALYTICAL LABORATORY, YALE COLLEGE, }
New Haven, Connecticut, Oct. 24, '51. }

Messrs. Editors.—The subject which I have placed at the head of this letter, is not one which can be fully discussed in a single page of your journal; and yet it is one of so much importance that I desire to make a few explanations and statements, regarding the shape which it has now assumed among scientific men. When I mention the "mineral manure theory," I speak of that view of manures, which ascribes all, or nearly all, of their efficacy to their mineral constituents.

The principal supporter, and indeed the originator of this theory, is Professor Liebig. This distinguished chemist, distinguished no less by his clear, lucid style, than by his high scientific reputation, was, for a time, devoted to "the ammonia theory," excluding those mineral manures to which he now attaches so much importance. A few years since, however, he saw cause to change his ground, and has since held, that if we furnish mineral manures in abundance, plants will, without doubt, always obtain their ammonia, or rather their nitrogen, from the atmosphere or the soil.

In pursuance of this idea, he went so far as to compound, after careful study of ash analyses, specific mineral manures for wheat, rye, oats, turnips, &c., which were to take effect upon all soils in a proper physical condition. The failure of these specific manures, which were patented in England, was, as many of your readers, doubtless, are aware, very decisive. I had supposed the subject rather at rest, but find in the last edition Prof. Liebig's "Letters on Chemistry," published so late as the commencement of the present year, he reiterates

his former views on this subject in a most decisive manner, and prophecies that our future agriculture will defend them, however much we may distrust and disbelieve them now. I have also had occasion to observe quite recently, that some gentlemen of high standing among our own scientific men, follow Liebig in this as well as in other theories. For these reasons, I have thought it best to express my own opinions on this contested point, in order that our farmers may be aware, that all chemists do not hold to views which militate almost directly against the ordinary results of practice.

My belief is, that when Professor Liebig advocated "the ammonia theory," he was nearer right than he is now, when he only admits the necessity of mineral manure. Not that he was right then, but that better results would, in most cases, be obtained by the farmer in the use of ammoniacal or nitrogenous manures alone, than by the use of mineral manures alone. We find lands in all parts of the country, where strictly mineral applications, such as lime, plaster, marl, &c., fail to produce any very marked effect, but if upon any of our fields we apply guano, or sulphate or carbonate of ammonia, the character of the vegetation is at once changed, its color alters, its luxuriance and vigor increases, and in a great majority of cases the product is augmented.

Every farmer who has observed such matters intelligently, knows that the above statements are correct; indeed, they have been so far applied in practice, that the quantity of ammonia which any manure contains, is taken as the highest standard of its value. A guano for instance, with the usual per centage of ammonia, will bring twice as much as one which contains little ammonia, even though this deficiency is replaced by the most valuable possible mineral constituents.

I must not be understood to say, that mineral manures are not valuable; on the contrary, I have the highest opinion of them, and recommend their application in almost all cases where my advice is asked; the mineral constituents of the plant are no less indispensable than its organic part, and if one or two of them are absent from the soil, the plant will not flourish. There are many instances of these special deficiencies, which special mineral manures alone will alone supply, and there are certain mineral substances which have been found specially valuable; the most so of all these is phosphoric acid. Now, the *phosphates*, that is, the compounds of this acid, are not more necessary to the plant than are the *alkalies*, but the supply is far more apt to be scanty, and this—not its intrinsic importance to the plant—is the cause of its higher value to the farmer.

The same principle applies when we say that nitrogenous manures, of which ammonia is the most common form, are more valuable than any others known to agriculture. They

are volatile, easily decomposable, and very soluble—for all of these reasons they are extremely apt to disappear most rapidly. These manures, then, are worth more to the farmer than any others, because they are most likely to be needed, and because their scarcity renders it somewhat difficult to obtain a full supply. I make these statements fearlessly, and confidently, although against so high an authority as Liebig. I should not presume to oppose him on mere theoretical grounds, but feel that I am here sustained by almost uniform practical results.

It must be acknowledged that we have occasional instances reported, of plants growing upon soils nearly or quite destitute of vegetable matter; but in most of these that have fallen under my observation, the fact of the *entire absence* of vegetable, and particularly of nitrogenous matter, has not been sufficiently established. The information that they give is neither entirely definite, or well enough made out by continuous and careful experiments, to be set off against the immense array of facts brought forward in favor of the opposite view. Single experiments for a single year, must always be looked upon with distrust until amply verified, and it is by mainly trusting to such, so far as we are informed that the exclusive mineral theory has been built up. The laboratory alone is pretty sure to go wrong when it attempts to prescribe rules for practice; the chemist must go into the field and study actual experience, if he would serve the farmer effectually.

It has been my intention to experiment somewhat largely upon this particular subject, but in the last number of the Journal of the Royal Agricultural Society of England, is a paper by Messrs. Laws and Gilbert, that almost precludes the necessity of doing anything more. These gentlemen have been experimenting on a large scale during the last ten years, and their results are clearly and admirably set forth.

They took a field at the close of a four year's rotation, when the manures added at the commencement of the course were exhausted. On this ground they have cultivated wheat for ten years, under various conditions. One plot remained unmanured, and the produce of this served as a standard and starting point for comparison during the whole period. Thus, if its yield in 1845 was 17 bushels per acre, the improvement over this in an adjoining plot, otherwise the same, was set down to the advantage of whatever manure had been employed. Such a system of cropping, continued for so long a time, obviously affords results that are worthy of much confidence.

The first year's comparative practice, was made with various approved mineral manures alone. It was found that even by the addition of large quantities of these, the increase of product over the unmanured plot was but trifling. In the next year the same character of mineral manures was employed, but with the

addition in several cases of ammoniacal or nitrogenous substances; in all of these the effect was quite marked, the yield increasing to 10, 12, and 14 bushels, above the unmanured plot.

This, in short, was the character of all the results; sometimes ammoniacal manures alone were added, and then the increase was several times more than by mineral manures alone. One experiment was very striking. Four hundred weight per acre, of Liebig's special mineral manure for wheat, was applied to a plot, and produced an increase of but about two or three bushels; upon this same plot, in the next year, a purely ammoniacal manure gave an increase of ten or twelve bushels. To make the experiment still more conclusive, no manure was added to this plot for the next crop, and the yield then fell again almost to the original standard. These trials seem to me perfectly conclusive in this matter, so far as wheat is concerned; they prove that ammoniacal manures increase its growth far more than mineral manures, where both are already present in moderate supply, and that the addition of any amount of the latter will do little good, unless the former be also present.

These views are still further sustained, by a very able paper in one of the late French scientific journals. The experiments in this case were made upon oats, and were between forty and fifty in number. They commenced by growing them out in sand, first deprived of everything soluble by acid, and then burned to drive off all vegetable matter. In this, as might have been expected, no perfect plants were produced. One mineral substance after another was added, until at last it was found that with a certain *seven* of them, the plant flourished better than with any others. It, however, was still far from luxuriant, or from yielding a fair amount of grain; it was not until some manures containing nitrogen had also been added, that entirely healthy, fertile, strong plants were obtained. These experiments appear to have been very carefully conducted, and furnish important confirmation to those of Messrs. Lawes and Gilbert.

There are other questions involved in these experiments, which for want of space cannot be discussed here; the main point is, I think, fully established. The farmer may supply special deficiencies by special mineral manures, and should aim to keep up the supply of mineral substances in the soil; but he cannot render it fertile, and continue it so, with them alone; he must also supply nitrogen in some form, and will find it in a great majority of cases the most important and efficacious of all fertilizers. In despite of *theoretical* views to the contrary, he will find that in *practice*, he can best afford to give a high price for those manures that are especially rich in ammonia, or some other compound of nitrogen.

Yours truly,

JOHN P. NORTON.

For the Southern Planter.

SUBSOILING.

To the Farmers' Club of Nottoway:

I last year tried the effect of subsoiling upon tobacco and corn. I subsoiled a strip of land running through the centre of a lot of tobacco; the land on both sides ploughed and cultivated in the same way, except the subsoiling. There was no perceptible difference in the growth or production of tobacco. The land is now seeded in wheat; there is no difference perceptible in the wheat up to this time. I subsoiled one bed on a piece of flat land in corn—no perceptible difference in growth or production; the subsoiled bed, and beds adjacent, on both sides ploughed and cultivated the same way and now in wheat, and up to this time I have seen no difference in the wheat. The land in both cases was ploughed with a two-horse plough, to about the depth of six inches, followed in the same track by a bull tongue plough, which penetrated some eight or ten inches below the furrow of the turning plough.

WILLIAM R. BLAND.

THE LOIS-WEEDON SYSTEM OF WHEAT CULTURE.

The simple facts regarding Mr. Smith's wheat culture at Lois-Weedon are as follows: We confine ourselves to his four-acre field, for that presents the fairest test of the system. It was taken in hand during the autumn of 1850, having just borne a crop of wheat. In 1847, it was in Swedish turnips, and received an ordinary manuring of farm yard dung—this crop was carried off the land; in 1848 it bore an average crop of barley; in 1849 it was in clover; and in 1850 it bore an average crop of wheat—an average crop of wheat on such soil is 24 to 28 bushels. The soil is not, strictly speaking, a wheat soil; it is of a free, somewhat gravelly staple—of a dark color, pretty full of white gravel stones. On entering this field in October, 1850, it was immediately ploughed "an inch deeper than it had ever been ploughed before;" it was then cleaned and levelled, and the wheat was sown in triple rows one foot apart, with the blank intervals of three feet. These intervals were dug "two shallow spits" deep—in all not more than fourteen inches; and Mr. Smith, then, as he wrote in November, "without any misgiving awaited the result." The result was a crop of 164 bushels of clean wheat (exclusive of tail,) from the four acres of land. Little more than one bushel of seed had been used over the four acres, in seeding the 29,000 yards of single row which they contained, and this does not seem so insufficient an allowance, when we remember that a bushel of wheat, generally, contains upwards of 600,000 seeds. But it was not on the mere thin seeding, the mere

space thus given to each individual plant—nor was it exclusively on the greater scope thus given to atmospheric influences, that Mr. Smith built his confidence. We do not suppose that these, alone, would have produced the enormous crop that was reaped. The peculiar merit of the alternate seed bed and fallow system adopted at Lois-Weedon, lies less in the management of the former than in the existence of the latter. And it is not upon the fallow given last year to the land under the plants of the growing crop, more than upon the fallow which is being given to the land this year alongside of the growing plants, that their productiveness will depend. The crop of 1850 was grown upon a well ploughed wheat stubble, which was not a very desirable preparation for wheat, but it was grown everywhere alongside of a well tilled and deeply pulverized fallow strip, through whose soil the hungry roots could luxuriously expatiate, and that, no doubt, was how it proved so productive. The crops sown on the strips followed in 1851, yielded, last year, only 30 bushels "per acre," a result which is sufficiently explained by the character of the season. We prefer to retain the style which "Economist!" objects to, of considering all these as acreable results. We are not to consider the system as crop and fallow, alternately, (as regards time) *i. e.* year about—so much as alternately, merely as regards space, *i. e.* as you walk from one side of the field to the other. The former style puts the crop to the credit of last year's fallowing, whereas, in truth, the crop is properly due to this year's fallowing. And so we consider, that whereas under previous management the land had yielded an average crop of 24 to 28 bushels per acre once in four years—under present management it has yielded after the rate of 40 bushels and 30 bushels per acre during successive years. Certainly nothing can look finer than this four-acre piece at present does. The seed amounted to about a bushel for the four acres. The fallow strips of last spring and summer were in admirable order for its reception. It was sown in September, and the stubble strips alternating with it, have since been deeply dug. The rows of wheat are now of a healthy color and most vigorous growth, lying flat and bushy on the land, just as those most interested in the next crop could wish. For the rationale and the results of the Lois-Weedon system, we recommend our readers to study the 10th edition (incomparably the best of the series) of Mr. Smith's pamphlet, "A Word in Season." It is sufficient to add here, in justification of a previous article on the subject, that we do not propose that this new mode of agriculture, if it is to be so called, be recommended for universal adoption. Its results, hitherto, are useful, perhaps, chiefly as an illustration of the wonderful influence of thorough tillage upon fertility; but independently of the principle which they inculcate, they might, we think, and they will, we have little doubt, induce many to copy in full

detail the methods by which they were attained. We strongly advise farmers to try the Lois-Weedon system on *one* of their wheat fields, if not on all. This can be done without any great interference with the price of labor; and if a field of suitable soil be selected, we have little doubt that *more than one* field will, in the course of a few years, be subjected to the same style of management. The mode in which Mr. Smith recommends a first adoption of his system, is detailed in the 10th edition of his pamphlet.—*Agricultural Gazette.*

For the Southern Planter.

REPORT ON THE USE OF LIME IN NOTTOWAY COUNTY.

. *Mr. President.*—As a member of a special committee appointed in the early part of the last year to test the value of lime on growing crops, I beg leave to report: That, in the early part of March, I spread over an acre of land, litter composed of pine and oak leaves, enough to cover the entire surface. On the 5th day of this month, thirty bushels of agricultural lime was scattered uniformly over this litter, and the whole of it turned under with a double horse plough.

This was planted in corn at the usual time, and cultivated in the usual way, from which I realized a crop considerably increased by the application—but, to ascertain with greater certainty its value in an uncombined state, I made an application of lime at about the same rate, to a piece of land adjoining of the same quality, and without the admixture of litter. This, was also planted in corn, and yielded a crop very little inferior to the first experiment.

It was not measured, so as to ascertain the improvement with exactness, but was sufficiently obvious to leave no doubt on the minds of general observers. I asked one of my negroes, during the growth of the crop, if he could discover any benefit by the use of lime; "yes!" he said, "I think it a great deal better than artificial guano,"—a high compliment to lime, in comparison with the other miserable humbug.

The land on which these experiments were tried, was old-field of the third or fourth year, of a light nature, and with the stumps just crumbling to decay.

On the 6th day of this month, I made an application of lime at about the same rate to a strip of wheat, where the land was almost entirely of sand, and no grass had been seeded, the wheat was guanoed; I thought it continued greener than the surrounding wheat, but marked no particular increase in product.

The land on which this experiment was tried, was treated to a dressing of about three hundred pounds of guano, the acre, and seeded in turnips, both ruta бага, in the drill, and common white turnips, broadcast. The crop

was an abundant one, thereby establishing the important fact, that there is no incompatibility between spring dressing of lime, and fall dressing of guano—agents, which, when simultaneously applied, are found to be so mutually destructive, may be thus rendered, not only harmless, but mutually subservient to each other's efficiency.

On the 26th day of March, I applied ten bushels of lime to one-half an acre of wheat set in clover this spring, with an abundant crop of sheep sorrel on the land. As this is an active plant, I desired to see whether the alkali would not so neutralize the soil as to destroy it. It has not, yet, done so.

The wheat and clover grew finely, and yielded a good crop. If there was a larger yield than in the parts of the field addressed by lime, (which I have thought there was,) it was not sufficiently apparent to state it as an undoubted fact.

Respectfully submitted, by
J. M. HURT.

January 13th, 1853.

For the Southern Planter.

ATKINS' AUTOMATON, OR SELF-RAKING REAPER.

Reaping machines are attracting great attention, both in the United States and in Europe. Recently, there have been many alterations and improvements in this very important machine. Among these, is one made last year by Mr. Jearum Atkins, of Chicago, Illinois, which consists in attaching a rake to his reaper, which is, in some respects, like Hussey's. This rake is worked by a very curious, but simple piece of mechanism, displaying great ingenuity in the inventor. The same forward motion of the machine which works the blade that cuts the wheat, also sets the rake in motion, and as fast as the grain is deposited on the platform, the rake sweeps over it, presses the wheat against a sheet iron palm, holds it firm, turns one-fourth of a circle around, when the rake opens and deposits the grain on the ground in rear of the machine, and in suitable bundles for binding. The rake then reaches around for another bundle, and so on, dropping the bundles at equal distances along its track. This is, doubtless, a very pretty operation, but it strikes us, (though we acknowledge we are not capable of judging, never having seen the machine) that there is more importance attached to this improvement than it merits. It must enhance the price of the reaper, make it more complicated, and, consequently, render it more liable to get out of order; whilst the only advantage which we can see, is saving the labor of one hand, viz: the rakeman who rides along on Hussey's machine, and performs the raking in a satisfactory manner.

The most perfect, and the most useful ma-

chinery is, generally, the most simple; and simplicity of construction is absolutely indispensable in every implement that is to be used by ignorant laborers.

This machine of Mr. Atkins', which Mr. J. S. Wright of the Prairie Farmer has patented, includes in its patent, a simple and decided improvement, by which, the knife or blade is prevented from clogging. Judging from the very little that we know about reapers, we are disposed to think this one of the best machines of which we have heard.

June 3, 1853.

For the Southern Planter.

COTSWOLD SHEEP.

Mr. Editor,—I will simply state for the benefit of my brother farmers of the South, especially those of them who have been imposed upon by Northern impostors and humbuggers, that at my sheep shearing, the 30th day of May last, I sheared from a yearling Cotswold buck, not fourteen months old, purchased by Col. John L. Cralle and myself of Col. Josiah W. Ware, of Clark county, Virginia, the enormous quantity of seventeen and one-fourth pounds of wool, (17¼ lbs.) measuring from eight to fourteen inches in length; the quality of which you can judge of by the sample sent, which is neither the longest nor the shortest, but just about a medium staple. And the buck weighed after being first clean sheared (and he has no horns) two hundred and nine and three-fourths pounds live weight, (209¾ lbs.) which I think is pretty good weight, considering he is not yet fourteen months old. I make this statement that Virginians and Southerners may know that they can be supplied in Virginia with what I, in my humble judgment, consider the very best stock of sheep for our purposes in America. And I know of no one who can supply them so well and on better terms than Col. J. W. Ware, of Berryville, Clark county, Virginia.

You can do as you like with this, burn it or publish it.

Most truly yours, &c.,

R. H. ALLEN.

Oral Oak, Virginia, June 3, 1853.

HOW TO GET RID OF MOSQUITOES.—The oil or essence of pennyroyal, (the oil is the best) sprinkled around the room, and over the bed-clothes, before retiring to bed, has been found to answer admirably in correcting these rowdy insects of their *calithumpian* and *bill-sticking* propensities. It is a volatile article, and therefore can do no injury to the clothes, while the aromatic flavor is by no means disagreeable.—*Southern Cultivator.*

For the Southern Planter.

LOUDOUN COUNTY AGRICULTURAL SOCIETY.

Mr. Editor.—Having been requested by the President of the Loudoun County Agricultural Society, to forward to the Editor of the Southern Planter, an account of the present condition and prospects of our Society, I take pleasure in complying with the request. This Society had its origin in the desire of a number of public spirited individuals of this county, who believed that benefit might arise by an association of this kind, and who did not wish an impression to go forth, that they were less concerned for their own agricultural advancement than were the citizens of other counties. It was organized during the early part of last year, and a list of premiums were offered, and a fair held at Leesburg, last fall. The exhibition and attendance were creditable; and

from the interest manifested at present, hopes are entertained of an enlarged exhibition and fair this fall.

From the Treasurer's report it appears that the amount received from members was \$334, and that there was collected at the fair, \$252 25; and there was paid out for premiums, \$136; and for incidental expenses, \$176 33; and leaving a balance in his hands of \$273 92.

At the meeting of the Society this spring, the following officers were re-elected:

ROBERT L. WRIGHT, Wheatland, *President.*

JOHN A. CARTER, Union, } *Vice*

JOHN GEORGE, JR., Lovettsville, } *Presid'ts.*

C. T. HEMPSTONE, Leesburg, } *Correspond-*

YARDLEY TAYLOR, Purcellville, *ing Secretary.*

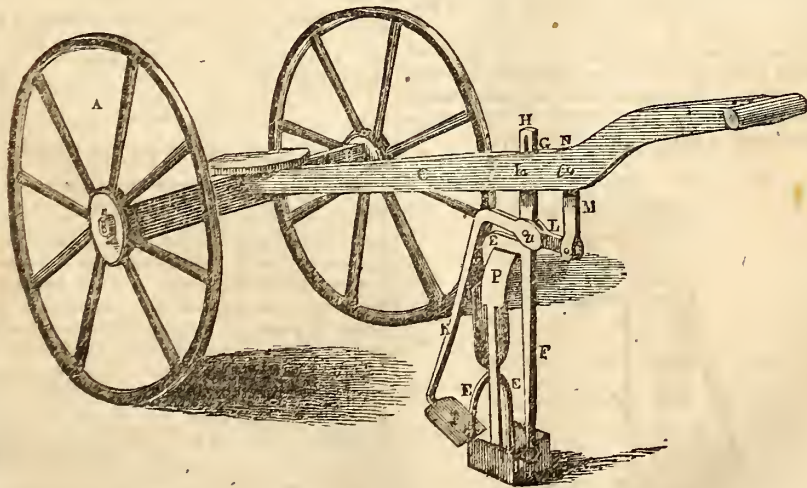
WILLIAM FULTON, Leesburg, *Recording Secretary.*

JOHN B. WILDMAN, Leesburg, *Treasurer.*

YARDLEY TAYLOR, *Cor. Sec.*

Loudoun, 6th mo. 23d, 1853.

MORRILL'S IMPROVED DITCHING MACHINE.



This engraving is a perspective view of a ditching machine, patented by Jonathan W. Morrill of Hampton Falls, New Hampshire, May 19th, 1853.

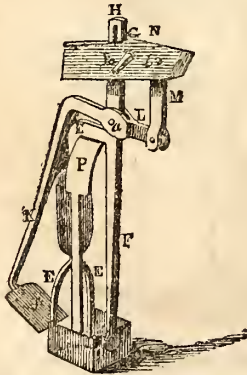
A A are the wheels; B is the axle of the same, across which the beam lever, C, is secured. The cutters for ditching are placed and secured in this lever. D D D are the cutters for cutting the sides and front edge of the sods. These cutters are

united together and are braced and supported by the stirrup brace, E, which has a vertical bar, F, secured to the front edge, and passes up through the slot, G, in the lever, C. This bar, F, has a slot, H, cut in its upper end with a pin, I, passing through it to make it fast to the lever. As the cutters are raised and lowered, the slot in the bar, F, admits of the lever, C, being depressed and raised. J is a spade, cutter,

or scoop; it has a bent handle, K, L, which turns on a fulcrum pin, a, which passes through the bar, F. The part, L, is secured to a link, M, which passes up through a mortise, N, in the beam, and it is loosely secured in the same by a pin, c, which it allows to move back and forth, as the cutters, D D D, and spade, J, are depressed or elevated. O P are thin plates of metal for guiding the sod as it is raised up, and for throwing it out at the side of the ditch. The plate, P, is only to incline the sod to one side.

Two men take their position at the handle of the lever, facing the wheels. They press down the lever, which causes the spade to fly out, at the same time cutting the sod on three sides; then, raising the lever (without changing their hold,) forces the spade in, cutting the sod off at the bottom. The machine being now at the surface, swings forward seven inches, when the same operation is repeated, one sod pressing out the other, throwing them upon the side of the ditch. Or the lever can be extended across the axle, a man working at each end.

The machines can be made to cut ditches one, two, or three feet deep, and seven inches wide, or fourteen or twenty-one inches wide, by going over the ground twice or thrice, or wider by repeating the operation. It is comparatively easy work for two men. It is fitted to the large wheels of a single horse wagon.



It may be used to good advantage with the wheels and lever, by having attached to it a piece of wood two feet long, with handles, as represented in the small cut. It cuts a ditch smooth on the sides and bottom.

Applications for machines or rights may be made to the patentee as above.

For the Southern Planter.

SHUCK MATTRESSES, &c.

Mr. Editor.—I wish to become a subscriber to your paper, to commence with the January number of this year, and will thank you to send it to me at Smithville Post Office, Powhatan. Please direct it with my full name, as I have a near neighbor with the same initials, which might cause some inistake. I will endeavor to send my dollar in a few weeks.

Yours, respectfully,

JOSIAH SMITH.

Powhatan county, March 18th, 1853.

P. S.—Since writing the above, I have thought it might be well to give you my plan for preparing shucks for making mattresses—I have very little doubt but some of your readers may have seen them prepared in the same way, still, there may be some, like myself, who have had to resort to the tedious operation of hackling with the flax hackle, for the want of something better. Being very fond of a shuck mattress, and not having patience with the hackle, I was induced to try some shorter plan. I have the shucks pulled or cut off from the nub, and when I have as many as I need for present use, I pass them through my wheat machine twice, and have them well prepared at once, though not as fine as the hackle would make them, but sufficiently fine to make a first rate bed. If you think this worth a place in your valuable paper, you can publish it, if not, consign it to the flames.

J. S.

COST AND PROFITS OF GUANO.

A correspondent of the "*Edinburgh Quarterly Journal of Agriculture*," in allusion to the fact, that the fixed price of guano has settled to \$45 per ton, states that it is a curious coincidence that the returns of the crops manured with it amount to just about the cost of its application. For example, three hundred weight per acre, the usual quantity, amounts to thirty shillings, (sterling,) which has been found on an average to increase the whole crop six bushels. This, at forty shillings per quarter, is just thirty shillings, the exact expense of application.

The amount consumed in that country, in consequence of no profit being made by its use as a manure, he thinks is very moderate, when compared with the extent of farming territory, and will continue to be so until the price of guano is lessened. By reducing the duty on this article to one pound per ton, the price would immediately become so low that farmers would find its use eminently profitable, and the trade

would increase so rapidly that the Peruvian revenue would be actually augmented. "The British creditors of the Peruvian nation have not allowed them to make that reduction;" the chief difficulty in the way of which, appears, at present, to be want of sufficient proof of the extent of the deposits—some distinguished persons having declared that they could not hold out twenty years, at the present rate of consumption; while others assert that there are no less than thirty millions tons in the beds already explored, to say nothing of others. It must be a very superficial examination that would lead wise men so far apart as this in their estimates, unless interest has led to gross misrepresentation, as there is some difference in twenty years and several centuries. Cannot some of our powerful governments afford to send a competent person to examine these beds accurately, and to furnish a true estimate of the number of cubic yards?

From the Northern Farmer.

THE BIBLE A TEXT BOOK FOR SHEEP HUSBANDRY.

A gentleman who has had much experience in sheep raising in Virginia, writes thus:

"In the year 1840, while reflecting upon matters of stock and sheep breeding, it occurred to me, that the Bible contained information of a practical character upon this, as it does upon most other subjects; and I turned over its sacred leaves to see what the great successful shepherd, Jacob, had left on record with regard to this department. I soon found that he had designated the number of males and females which constitute a flock for breeding to advantage, in his present to his brother Esau, to whom he gave "two hundred ewes and twenty rams."—Genesis, 32d ch. 14th v.

"The proportion being one ram to ten ewes, I suppose this relative quantity was designed to keep up the equality of the sexes; and after a careful examination of my own flock of about forty ewes with two rams, and finding it to hold nearly true, I commenced with the adjoining farms of greater extent. Without informing any one of my motive, I requested all the overseers to give me at shearing time, the number of ewes and rams in their flocks, and the number of ewe lambs and ram lambs of the season. You may judge of my surprise, when in every case out of seven farms with large flocks, the facts confirmed the theory. In all cases where the proportion of one ram to ten ewes existed, the sexes of the lambs were about equal—in some cases, where there was a great disproportion from this rule, either

way, there was a corresponding disproportion of the sexes of the young. One man had a ram for every four ewes, and nearly all of his lambs were rams—another had one ram to fifty ewes; the result was nearly all were ewe lambs.

"For several years I continued my inquiries, and the Jacobian rule was satisfactorily vindicated in nearly every instance."

From the Boston Cultivator.

TUMID JAW IN CATTLE.

Messrs. Editors.—I have reason to believe that every attempt to cure the tumid jaw in cattle, after—as your correspondent Frank expresses it—(see *Cultivator* for April 16th) it has become a "sit fast," will be found abortive, at least, I have never yet known a cure effected by the most skillful treatment; it is satisfactory, however, to know, that unless the animal thus afflicted has an extraneous value, its intrinsic worth might be secured by feeding for the butcher, commencing at the time when the evil is first discovered, between which and the period when the creature begins to lose condition, the season will prove long enough for common purposes. I very well remember that a remarkably fine short-horn cow, selected in England, and brought to this country in company with the Bates' bull, "Yorkshireman," by Joseph Cope, of Westchester county, Pa., was thus diseased, but her extraneous value forbade the sacrifice of her life by the butcher; yet, with all the care of the owner, and skill of the medical professor, I have no idea that her life was long spared. At this time, too, there were several other cases of the same nature in the neighborhood, one, especially, at Allerton Farm, the owner of which being desirous to know if the disease had ever been cured, made inquiry to that effect through the *Farmers' Cabinet*, and was answered in an article that appeared in the next number, written by a medical practitioner of the highest standing, and from which I beg to make a few extracts, and remain your subscriber,

JOHN MARKS.

The *Tumid Jaw* in cattle, is essentially the same disease which surgeons call *osteosarcoma* or *bony cancer*, in the human subject. It is a disease of the bony system, and is common to man and the lower animals. Although the jaw bone, and especially the inferior one, is the most frequent seat of this terrible malady, yet it may in-

vade any part of the bony fabric. No satisfactory cause has yet been assigned for *osteosarcoma*. Sometimes it may follow contusions or other injuries of the bones; or when seated in the jaw, it may appear to proceed from the irritation caused by a decayed tooth; but there is reason to suppose that in those cases there must have been a *constitutional predisposition to the disease*. This supposition is rendered more probable, since it has sometimes attacked successive members of the same family; at other times, it has appeared almost simultaneously in distant parts of the body, and when the affected member has been removed, the disease has been reproduced elsewhere.

The seat and commencement of this malignant disease, is obviously in the *spongy cellular substance*, formed in the interior of most bones. As the disease is developed, the bone swells, and its healthy structure becomes entirely changed. The following graphic description of the appearances of the tumor, is drawn by Dr. Gibson, (*Surgery*, vol. i. p. 403.) "The bone will be formed smooth on the surface, and either uniform and regular, or else disposed in lobulated masses of different forms and sizes. Sometimes these are extremely regular, of a rounded form, and resemble very much a cluster of grapes. At other times, several large masses are joined together, and present the appearance of an artichoke or a protuberant potato. When the bony texture of these tumors is cut, forcibly separated, or crushed, a number of irregular cells are brought into view, containing either a thick, cheesy, lardaceous, medullary matter, or gelatinous, or semi-transparent fluid, which oozes out of its own accord, or can be removed by mechanical means, or by maceration—leaving the sides of the cavities lined by a very fine and delicate membrane. The morbid tissue of bone will then be found to consist of innumerable spicula, disposed in endless variety of ramifications, and shooting out in fantastic forms, resembling some species of coral, or assuming the shape of some vegetable productions."

The same writer continues, "I have in my possession a very fine specimen of *osteosarcoma* of several pounds weight, taken from the upper jaw of an ox. In this specimen, the cells which I have described, and the arrangement of the bony spicula, are uncommonly well displayed, owing to the magnitude of the tumor, and the ori-

ginal texture of the bone upon which it is reared."

In the more advanced stage of *tumid jaw*, more or less suppuration takes place; the tumor bursts in one or in many places, and pours forth an ichorous and corrosive discharge, which soon excoriates and contaminates the adjacent soft parts. From this time the disease puts on more and more the appearance of malignant cancer, until the poor animal falls a lingering prey to suffering and exhaustion, or is kindly released from further torment by the humane interference of its owner.

It may readily be perceived, that a disease such as I have described, will prove intractable and difficult to cure. In its incipient stage of *tumid jaw*, while the tumor is small, it ought to be rigorously attacked by *oft-repeated blistering*—or by opening a constant drain from the immediate neighborhood by means of a *rovel*, or the application of *strong caustic*. If these means fail to avert its progress, an operation for its entire removal should not be too long delayed. With this view, the whole of the diseased mass must be laid bare, and by the bold and dexterous use of small saws, gouges and chisels, *every vestige of unhealthy bone must be cut away*. As we are by no means certain that success will attend even this dernier resort, I would by no means recommend it in ordinary cases. Where there is no extraordinary value attached to the animal, perhaps it would be more prudent to *put it off*, before the disease shall have progressed so far as to interfere with the process of feeding. Neither is it likely that any lasting advantage would accrue from the operation, after the tumor has become a *corroding cancerous sore*.

MEDICUS.

CURE FOR ROSE BUGS.

A subscriber wishes to know if any one can suggest a method of preventing the yearly incursions of the rose bug, and having heard considerable complaint among our neighbors of having their cucumbers, grapes and other fruit destroyed by these insects, I will suggest a remedy. Plant in the centre of your garden damask rose bushes, and they will never light on any thing else. We have a large garden with almost every kind of fruit, vines, shrubbery, and flowers, with several kinds of roses, and in the centre we have four bunches of damask rose bushes, and I never saw in the whole garden a rose bug on any thing but the damask rose. When they are in blossom I go

into the garden once a day with a pan of hot water, and get about a pint at one time; this I practice for a few days, and then they will disappear.—*Boston Cultivator.*



THE SOUTHERN PLANTER.

RICHMOND, JULY, 1853.

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.

Subscriptions may begin with any No. No paper will be discontinued, until all arrearages are paid, except at the option of the Publisher.

Office on Twelfth, between Main and Cary Streets.

All communications for the columns of this paper, and all letters of inquiry, to insure prompt attention, must be addressed to Frank: G. Ruffin, Shadwell, Albemarle County, Va.

All business letters connected with the Planter must be addressed to P. D. Bernard, Richmond, Virginia.

ANSWER TO CORRESPONDENTS.

"A Subscriber" wishes to know if the Mediterranean wheat is affected by joint worm, and what are the remedies for it generally. We shall touch the latter question in August, and can only reply now to the first, that the early wheats are somewhat less affected than the later varieties. But even this very slight exemption is modified by season and other circumstances, and is liable to exceptions for which no cause can be assigned.

POSTAGE ON THE PLANTER,

When paid quarterly or yearly in advance.

To any part of the United States 1½ cents per quarter, or 6 cents per annum.

WANTED IMMEDIATELY, AND BADLY WANTED,

At the office of the Southern Planter, four thousand dollars due by a portion of the subscribers, who are now receiving the paper.

This money is wanted to enlarge the paper, to improve it, to pay debts already contracted in its publication, and to *live on*. It cannot be a burden to any one to pay the small price asked for the Planter, and we have no doubt of the inclination of our friends to pay us. But it is so small a matter that they put it off from time to time, to our loss, and, in view of what might be done with the money, to the loss of the agricultural community.

We hope our friends will attend to this at once.

STATE AGRICULTURAL SOCIETY.

We are happy to state that our work goes on very well.

Genl. Richardson, the Society's agent is industriously employed, as will be seen by his letter below, in getting members to it, and engaging contributions to its fair. We feel well assured that if any man can succeed, he will. To remarkable conscientiousness and zeal in whatever he undertakes, he adds a devotion to agriculture, sufficient of itself, to carry him over impediments much more serious than any, we hope, he is likely to encounter in his travels. For we will not permit ourselves to believe that Virginia will be backward or slow in the formation of an Agricultural Society. Like our patriotic friend of the Dispatch, from whose columns we copy the letter, (and only regret that we have not room for the hopeful editorial which introduces it,) we think that there is material among us for a first rate society, not only in respect of ability of members, but, also, of articles for a good exhibition. All our farmers want is public spirit to induce them to show both themselves and their commodities, and if Genl. Richardson cannot infuse that into them we know no one who can.

The following letter is a mere outline sketch of what Genl. R. has seen, which he has promised to fill up for the Planter when he gets time, and to continue as his travels extend. We confidently expect from him a series of articles on the agricultural resources of Virginia, as interesting and instructive as any which has yet appeared in our pages:

Richmond, June 15th, 1853.

Dear Sir,—I have been so constantly on the wing of late, that it has not been practicable to keep you "posted up" in the proceedings of the State Agricultural Society. It may be truly said that this Society has now for the first time, an organized and vigorous existence. "The union of the" farmers "for the sake of" the farmers, being of vital importance, the Society has taken measures for canvassing the State as thoroughly as practicable with that view, and also for uniting with it the mercantile and industrial classes as incidentally interested in the cause. It has made the terms of membership low enough to enable all to become members, and has received a prompt and liberal subscription from the merchants and mechanics so far as they have yet been applied to.

The Executive Committee has determined upon holding the first great cattle show and fair, in the city of Richmond, early in November, immediately succeeding that at Baltimore, and we have ascertained that there is within convenient access to this place, as much fine stock owned in Virginia, as can be produced any where—and which if sent forward as is promised, will do credit to the State. But the Society is anxious also to have the contributions of our worthy mechanics from every section of the State, and thereby to show, as we think can be shown, that Virginia is unnecessarily and culpably tributary to other States, for what her own artisans can supply as cheap and as good as any in the world.

We not only do not appear to know what we can do—but we do not know what is actually doing in the State. Our cities are instinct with enterprise—have each of them their great lines of railroad in progress—population rapidly increasing, commerce and the mechanic arts thriving—life, energy and activity pervading every thing. You are familiar with the state of things in Richmond, and therefore I need not stop to speak of it—but in Petersburg—in Norfolk and in Alexandria the evidences of

enterprise, industry and prosperity meet one at every step. In Norfolk, I saw among other things, some of the handsomest specimens of coach making in the extensive establishment of Mr. Thomas A. Mayer—and upon jocularly remarking to him that an amphibious population had not, I supposed, much occasion for riding carriages, was surprised to learn, that in addition to the local demand, he had several depots for the sale of carriages, one of them in Richmond. I saw there also, as in other cities, beautiful specimens of saddlery and other branches of the mechanic arts.

Petersburg—the gallant Cockade city—always in the van, appears to be in a rapid and healthful state of improvement. She has made a strong impression upon the subscription list of the Society, and need not—will not, I am sure, fall below any of her sister cities in the exhibition.

I had not until last week, been in Alexandria for more than twenty years—of course not since she got back to our old Mother—and so great has been the improvement there, that I should never have known the place. The old church was the only object recognized, and even that bears the impress of an improvement which seems to be universal. Passing through one of the streets, I saw just ready to be run on board a vessel at the wharf near by, the largest locomotive engine I had ever seen, just completed at the extensive establishment of Smith & Perkins, in Alexandria, for the Hudson River Railroad. It weighs, I was told, 60,000 lbs.—cost \$10,500, and is constructed for burning coal instead of wood. A friend introduced me to the public spirited and intelligent proprietors of this gigantic establishment, which far surpasses my power of description. I therefore send you as better than any thing I could give, a slip cut from the Alexandria Gazette. It is worthy a place in every paper in this and the States South, and I hope you will find room for it. Extensive additions are in progress by Messrs. Smith & Perkins—and another large factory of the same character will ere long be in operation, under the direction of Mr. Jamieson, a native of that city. In addition to this, a large steam mill is building on one of the wharves—which will, when completed, be equal to seven or eight hundred barrels of flour per day. I also saw the extensive cabinet factory of Messrs. James Green & Son, which employs from one hundred and forty to one hundred and fifty hands, and turns out as beautiful fur-

niture as the hand of man can produce. Indeed, Alexandria seems destined to be a great city, and by means of her Railroads and fine harbor, cannot fail, I should think, to command a large trade which heretofore has gone out of the State.

As regards the state of agricultural improvement, it seems to have awakened to a new life. So far as I have yet had opportunities of observing, especially on the South side of James river, it is great and growing—moving steadily onward to a point of excellence never before reached, or even dreamed of. I have seen this spring, in the course of my excursions, some of the best cultivation I ever met with any where, and I much regret that want of time put it, out of my power to collect agricultural statistics, which in some places, especially in the country above Norfolk, must be seen to be believed. The farmers there operate upon a quick and kindly soil, easily cultivated, with the markets of Baltimore, Philadelphia and New York, by means of the lines of first class steamers—now at their very doors. The amount returned to Norfolk for spring and early summer crops—as peas, strawberries, tomatoes, cucumbers, Irish potatoes, &c., must be immense. A view of the truck farms, as they are called, in this (to us) terra incognita, would amaze the planters and farmers of our great tobacco and grain growing regions. Farms of twenty-five, fifty and one hundred acres returning thousands to the proprietors, within the first six months of the year, and producing besides, the requisite supply of corn and forage as succession crops—and this, in what has been generally regarded as the very poorest section of the State!!

On the farm of Lieut. Wier, of the Navy, I saw fifteen acres in strawberries; one hundred and ten persons employed in picking them, and was told that two hundred pickers was the requisite number while the crop was in full bearing. On other farms, I saw acres and acres in tomatoes, cucumbers, potatoes, &c., all for the Northern markets, and a gentleman of the highest character told me of one farmer, upon reclaimed land, in the vicinity of the Dismal Swamp, who *planted* 1200 bushels of Irish potatoes. Occasionally, some good crops of wheat and clover were seen, and several very fine grass lots. Indeed, it seems evident, that under-draining and liming would infallibly produce good crops of grass on these lands generally.

Very fine farming lands are to be found in this region, adapted to the growth of corn, wheat, oats and grass, as the operations of intelligent and improving proprietors will very soon show. I was more than gratified by visits to the farms of Captain James Cornick, Mr. Richard Walke and Mr. John Petty, in the county of Princess Anne, from five to seven miles distant from Norfolk, and saw at Capt. Cornick's varieties of corn and oats, (crops of last year,) superior, I think, to any I ever saw before. These oats, I learned, may be seeded in the fall, and stand the winter as well as wheat or rye. This farm—four hundred acres—under cultivation, is in the highest state of improvement, with admirably arranged farm buildings, good stock—"a place for every thing, and every thing in its place."

Mr. Walke's farm of 1000 acres, lately purchased, lies beautifully, has quite a paradise of a homestead, and cannot fail to yield a handsome return upon the improvements he is making.

Mr. Petty's is a large estate, 1700 acres, a considerable portion virgin forest, rich enough to produce as much corn per acre as any land in the State. The crop last year, on some of it, reached fifteen barrels. His attention having been chiefly devoted to other pursuits, he is but at the commencement of a system of improved farming—with his industry, intelligence and zeal, he cannot fail of success. He, too, has a most beautiful residence in Kempsville, where, as at other places named, the old style Virginia hospitality is dispensed in perfection. I am indebted to these gentlemen for two of the most pleasant days of my life.

Want of time deprived me of visits to Mr. Herbert, Mr. Garrison, and other gentlemen in that region, whose kind invitations it was not in my power to accept at the time. I hope to avail myself of them hereafter, in company with a strong detachment of the Executive Committee.

Passing through almost every portion of Virginia, from the mountains to the seaboard, especially upon tide water, it is a subject of absolute wonder that there should be so much unoccupied land, capable, as may every where be seen from the small portion in cultivation, of yielding profitable returns to the industrious cultivator. Cheap, too—cheaper, probably, than any of equal value to be found elsewhere. No portion of the United States presents such advantages to the farmer of

limited resources. Can no means be devised for calling the attention of the thousands who are seeking locations, to the vast and varied extent that Virginia can present to them? Where for \$5 to \$10 per acre, (doubtless, in many instances, for much less,) land may be purchased which now has wood or timber enough to pay for it, and which when brought into cultivation, with the aid of a few dollars worth of guano, can be made to pay for itself from the first year's crops. Of the number of Virginians who have abandoned their native State to seek fortune in the South and West, how few have prospered by the change! Probably there is not one of them, who, if he could now be reinstated in his patrimony, with present facilities for improvement, would not be substantially richer, and, in point of social comfort, immeasurably "better off."

But I have spun out this hasty sketch too far—it may serve, however, for you to pick out the information you want. Would that I could render any substantial aid to your zeal for the Society. An extensive tour is before me, and I have little time to write. Yet, full of hope for the great cause, any information I may collect shall be at your command. The Society wants, and must have, the influence of numbers, as well as of mind and skill—it wants, not 1500, but fifteen or 20,000 farmers in its ranks, besides the merchants and mechanics; and, therefore, it calls upon the cultivators of the soil every where in Virginia to be just to themselves, in giving each and every one his personal aid and influence. Let us hope that the call will not be unheeded. I write in much haste.

Very respectfully, yours, &c.,

WM. H. RICHARDSON.

To HUGH R. PLEASANTS, ESQ.

CRUDE ANTIMONY FOR HOGS.

Mr. A. H. Davies, of Columbia, Chicot county, Arkansas, in a letter to a gentleman, who has forwarded it to us, asks how to use crude antimony in fattening hogs.

We can only say that we have no experience in its use, either as a medicine or a promoter of fat. And we find it only generally stated that it is used for this latter purpose. As a medicine, we read that it may be given to each hog according to its size, from half an ounce to two ounces, properly pulverized and

mixed with some of his daily food for the space of ten days or a fortnight. We read in another place that an ounce is the common dose for a full grown animal.

Will some of our readers who have tried it state the proper mode of using crude antimony and what is its value?

If we have a Tennessee subscriber who will do it, we shall be much obliged to him.

RESOLUTION OF THE BRUNSWICK AGRICULTURAL SOCIETY.

At a regular meeting of the Brunswick Agricultural Society, held on the 16th of March, 1853, the following resolution was unanimously adopted:

Resolved, That the Corresponding Secretary be instructed to inform the Editor of the Southern Planter, and the Executive Committee of the State Agricultural Society that the action of its delegates, in the late meeting at Richmond, was cordially and enthusiastically approved by this Society; and request that this resolution be published in the Southern Planter.

FALKIRK TRYST.

Instead of bringing their cattle and sheep on in separate lots and selling them all along the road, as is the case in the grazing districts of the Valley, the drovers of Great Britain concentrate their stock in immense hordes, at particular places, whence they are distributed over the whole kingdom. One of the greatest of these places is Falkirk, which is the main market for the cattle, sheep and horses raised in the north or more mountainous part of Scotland.

The following account of the business done there will be read with interest by cattle men:

The earliest trace obtainable of this leading market is in 1701. In 1772 the number of cattle exposed there for sale amounted to 24,000.

"By the year 1812, the number of cattle exposed for sale had increased so much that Dr. Graham, the agriculturist, informs us that at the August tryst, about 6,000 head of black cattle were exhibited; at the September tryst, fully 15,000 cattle, and the same number of sheep; and at the October tryst, the number averaged from 30,000 to 40,000 cattle, and 25,000 sheep. 'It appears,' says this writer, 'that there are annually exhibited at the trysts above 50,000 black cattle, together with about

40,000 sheep. Taking the former at the moderate average rate of £8, and the latter at that of 15s. each, the value of the whole will amount to £430,000. An intelligent friend, who lives near the spot, calculated that 50,000 black cattle are exposed to sale at the last two trysts alone; and he estimates, on good grounds, that the total value of the cattle bought and sold at these trysts must amount to half a million sterling.' Within the last forty years, the business has immensely increased, and at a single tryst there is now a larger number of sheep and cattle than at all the three in Dr. Graham's day. At last October (1852) tryst, which was one of the largest that have ever taken place, there were probably not fewer than 80,000 cattle and 120,000 sheep, not including between 20,000 and 30,000 sheep sold before the market. The tryst of the previous October was about the same size, and there were as many cattle, at any rate, though perhaps not so many sheep. For some years previous to the two last, a falling off had been noticed, but this was no doubt owing to a dulness of trade, which seems now, fortunately, to have passed away. Good times have once more returned to the sheep farmer and the cattle grazier, and with them the trysts have revived to all the activity which they manifested some eight or ten years ago. The only permanent loss has been in fat cattle, which are now sent to London direct by steam conveyance, for the feeding districts on the east coast, instead of being brought to the trysts. But it is chiefly as a market for young grazing beasts and sheep that Falkirk Tryst is celebrated, and in these kinds of stock an increase rather than a falling off may be anticipated, as the capabilities of the islands become more developed. Meanwhile, let us endeavor to estimate the amount of business at present transacted. The following may be taken as a near approximation to the numbers and prices of cattle, sheep and horses for the last two years. In the absence of any exact account, the following estimate of the numbers has been formed, with the assistance of the most competent judges, while the prices have been calculated from correct averages of the different markets:

AUGUST.		
30,000 cattle at £5 a-head,		£150,000
1,000 horses at £15 "		15,000
		£165,000
SEPTEMBER.		
50,000 cattle at £5 a-head,		250,000
100,000 sheep at £1 "		100,000
2,000 horses at £15 "		30,000
		380,000
OCTOBER.		
80,000 cattle at £5 a-head,		400,000
120,000 sheep at £1 "		120,000
2,000 horses at £15 "		30,000
		550,000
For the year,		£1,095,000
Of this large sum, probably the greater part		

is paid by English dealers, who individually make by far the largest purchases of any dealers frequenting the trysts; for while Scotch farmers who wish to stock their lands in most cases attend and buy for themselves, it is the usual custom of English farmers to intrust their orders to agents. The business that thus passes through the hands of a single individual is sometimes very extensive, and we have heard of sums paid away in the course of a forenoon by a single commission agent which would make no paltry figure beside the great business transactions of Glasgow and Liverpool. Turning from the buyers to the sellers, we find the state of matters equally creditable to the enterprise of the Scotch farmers and salesmen, whose transactions are not so very far behind those of the Australian sheep owners as most people imagine. At the tryst in September, 1852, one dealer sold upwards of 10,000 sheep. In October, he brought forward nearly 15,000, but sold them all before the tryst commenced, owing to the great demand; and another dealer sold about 10,000 sheep at the same tryst. In fact, nearly one-half of the entire sales of sheep are made by some ten or twelve individuals. The most extensive sheep owners in Scotland at present are Mr. James Scott, of Hawick, and Mr. John Kennedy, of Kirkland, better known by the title of one of his Highland farms, Fasfern, on the Lochiel estate. Mr. Kennedy is said to possess from 40,000 to 50,000 sheep, a patriarchal number, which only two or three of the Australian magnates can surpass. Adjoining Fasfern is the farm of Locharkaig, which is rented by a gentleman who is tenant of upwards of a thousand acres of arable land in the county of Roxburgh, and has several other south country farms in his hands. Locharkaig contains, we believe, somewhere about 100,000 acres; it was stocked with 22,000 sheep, and, like his neighbor Mr. Kennedy, the tenant can ride twenty-five miles on his own farm. But the patriarch of Scotch sheep farmers and cattle graziers is Mr. John Cameron, of Corrychoillie, who can boast of having brought a greater quantity of stock to Falkirk Tryst than any man living; and no wonder, for, besides the extent of his flocks and herds, he has attended the market for nearly half a century. His transactions are not now so great as they were, but at one time Mr. Cameron used to institute a comparison, not very far out of the way as regards the numbers in either case, between the Duke of Wellington marshalling his army at Waterloo, and his own achievements in leading his sheep and cattle to Falkirk Tryst. Mr. John Patterson, of Skynet, whose death we observe recorded in the newspapers within the last few weeks, was another leading sheep farmer, and one whose prosperity was entirely owing to his own industry and perseverance. He commenced the world without a shilling, and before he retired from business he had nearly sixty miles of sheep-walks in the county of Sutherland alone.

In a recent work on the wonders of the southern hemisphere, we read of a Mr. Jeely, who, besides an estate of 50,000 acres, has 'hundreds of thousands of acres of pasture rented from the crown, 25,000 sheep, 3,000 cattle, and some 300 horses.' This is a very tolerable establishment, certainly; but about a dozen years ago, Corrychoillie—by which name Mr. Cameron is well known throughout the country—sent more sheep and cattle to Falkirk, in the course of a single season, than Mr. Jeely possesses altogether. Of course, these great sheep farmers cannot be present to superintend all their own farming operations, like the agriculturists of the Lowlands, but the sheep walks do not require the ever-watchful oversight which is essential on an arable farm. A steady shepherd can do all that a master can do, and the care of the flocks may be much more safely intrusted to him than the management of any other business to a deputy. It is this which makes it possible and profitable for one individual to hold farms in different parts of the country; and the practice is accordingly very general, and is necessarily followed by all the leading farmers, many of whom reside in the Lowlands, and do not visit their farms oftener than once or twice a year.—*Hogg's Instructor.*

For the Southern Planter.

IS SHADE A SUBSTITUTE FOR BARN-YARD MANURES?

Mr. Editor.—In the April number of the Southern Planter the question "Is barn-yard manure indispensable to the preservation of the fertility of cultivated lands?" is answered with much confidence in the negative; and with equal confidence the writer farther asserts that "even impoverished lands may be made exceedingly fertile without the application of manure of any kind whatsoever." The remedy prescribed, as universally applicable and infallibly certain, both in its conservative and restorative results, savors much of the character of the many nostrums of the day. These promise to cure all diseases, and, save fatal casualties and old age, to bar all the avenues of death. The wonderful panacea "shade" is made to promise even more; not only to exclude death altogether, but by its wonder-working power, to generate a vitality more vigorous and recuperative than that infused by the Creator. Now, sir, I apprehend there is a natural or inherent constitution of things that will forever modify the action of all agents brought to bear upon them. Two things, differently constituted, may be equally susceptible of improvement; and yet, with equal improvement, the original difference remains. Granite and marble may be subjected to equal operation of the artist, and both be greatly changed in outward aspect; yet they remain

granite and marble. Lands, in their original constitution, poor and sterile, may be artificially supplied with abundant aliment for plants; and lands, originally fertile, may receive, artificially, an equal increment of fertility—and yet the primordial distance, in the scale of fertility, will remain undiminished. They have approximated seemingly only; subject them to equal culture, and the results will soon show the extent of improvement. The one feeding liberally, soon exhausts its limited, borrowed stock, and future plants become sickly and dwarfish, from want of food. The other, with equal borrowed capital, backed by ample hereditary stores, produces abundantly, and at the same time, retains a surplus at interest, to supply the current waste; and so, with occasional rest, may hold on without exhaustion.

I apprehend the writer is mistaken in the declaration that "The observation and experience of practical farmers establish, beyond the possibility of a doubt, the important fact, that if the surface of the earth be closely covered with any substance whatever, it becomes exceedingly fertile, no matter how poor originally, nor what the deficiency in its mineral constituents." It will not be denied that covering land will, to some extent, enrich it, and it may be conceded that if the covering be continued long enough, the land will be fertilized to the full extent of its capacity to attract and appropriate fertilizing principles; but it may not be conceded that this fertilization will advance to a state of "exceeding fertility," no matter how poor originally, nor what the deficiency in its mineral constituents.

If mere shade be the wonderful agent, why is not the surface covered with stones as much enriched as that covered by straw or hay? Why is the surface shaded by the walnut tree always richer than that shaded by the oak? And why are not fields shaded with hen nest grass or broomsedge as speedily restored as those covered with clover?

That lands, originally rich, by a judicious system of rest and shade, with clover, &c., may be kept in good tilth for remunerating crops, is readily admitted; but it is quite another thing to restore these lands, when exhausted of their fertility by excessive culture, to their virgin richness, and greatly more difficult to render lands originally poor "exceedingly fertile." I should like to be certified of an example, where a poor Spanish or chestnut oak ridge of land, with a soil scarcely an inch deep, and that resting upon a subsoil of tenacious clay, has been made "exceedingly fertile" by mere shade. I would as soon expect to see an individual of a depraved, scrofulous and consumptive habit raised to a state of health, exceedingly robust and elastic, by any of the thousand cure-alls of the day, as that lands, originally poor, shall be rendered "exceedingly fertile," and kept in a condition to produce remunerating crops by mere shade.

Conceding that shade is the remedy, the

question comes up with what material and how shall we shade? For lands adapted to the growth of clover, peas, &c., and in sufficient tith, the remedy is plain; but for lands too poor to produce a covering, what shall be the remedy? A part, I suppose, may be covered with straw, another with leaves and brush—stones, when at hand, plank, logs, &c., may also come in for a benefit. What time is required to accomplish a state of *exceeding fertility* is an item of important consideration, as the time consumed in the accomplishment may outweigh the benefit or render it unavailable. If the writer, upon farther consideration, shall see no good reason to withdraw his confidence from the remedy he has prescribed, it will become a desideratum of no small magnitude that a prescription shall be furnished, by which, such as are unskilled in its use, by adapting its administration to the varying circumstances of constitution and disease, may secure to themselves the beneficial results of *exceeding fertility*. It may be that the writer has drawn his conclusions from observations made exclusively among the rich limestone lands of the Valley, and concludes that all others possess equal recuperative properties. This, however, would be scarcely less unwise than to conclude that because an individual of sound, robust and elastic constitution, prostrated only by excessive labor, had been restored to wonted health and vigor by mere rest and ordinary food; therefore the emaciated hectic of depraved constitution may be restored to a state of exceedingly vigorous health by similar means.

Doubtless the writer's purpose in writing was to contribute what he could to the general stock of agricultural knowledge—actuated and controlled by similar motives in making the above animadversions, I trust he will take in good part the liberty taken.

It may not be inappropriate just here to advert to the fact that opinions, whether derived from observation or experiment, are often published to the world with a lamentable want of discrimination and specification as to the attendant circumstances. This has been a fruitful source of disappointment to many who read agricultural papers, and attempt to apply practically the conclusions they form. Another and perhaps not less evil, is the tendency to foster in the minds of those opposed to what they call book farming, all their pre-conceived prejudice. In this way, the march of agricultural improvement has been greatly retarded. The speculative genius too often conceives and frames a theory, plausible and specious it may be—then makes facts and experiments bend, so as to furnish props to sustain the hantling; while the more practical man, discarding all means of learning except actual experience, confirmed and fixed in his opposition to all new notions and plans, adheres the more obstinately to the old beaten track.

B.

Charlotte county, 20th June, 1853.

For the Southern Planter.

TRIAL OF REAPING MACHINES.

Mr. Editor,—Presuming that the public generally and the farmers of Virginia especially, would be pleased to hear the result of the trial of reaping machines at Curle's Neck on the 21st and 22d of June, the undersigned, Chairman of the Committee appointed by the Executive Committee of the Virginia State Agricultural Society to award a premium of fifty dollars to the "best and most effective machine," feels authorized to announce that result to the public in advance of a more full and minute report to be made to the State Society at its meeting in November next. The following gentlemen, composing a majority of the committee of award, viz. Messrs. Richard Irby, Robert M. Taylor, Edward O. Watkins, John P. Royal and the undersigned, met at Curle's Neck, the estate of Mr. Wm. Allen, on the 21st ult. and found in the field, ready for the trial, three machines, viz. M'Cormick's, Hussey's and Burrall's. The committee appointed to make all the necessary preliminary arrangements for the contest having executed their office the machines commenced their operations about noon on the 21st ult. The weather was excessively hot and dry, the wheat shattering ripe, (the Maryland Blue Stem variety, very tall, and averaging, I suppose, some twenty-five bushels per acre,) the land mostly level, but a sufficient portion of it undulating to test the machines on that kind of land.

Without extending this communication—which I desire shall be brief—I will only add that the committee of award, after following the machines closely through the day of the 21st and again on the 22d with a sincere and anxious desire to award the premium to the "best and most effective machine," upon comparing opinions were utterly unable to agree, each member of the committee expressing his great difficulty in deciding between machines all of which had operated so beautifully and effectively for two entire days.

Upon taking the vote of the committee it was found that Messrs. Watkins and Taylor gave the preference to the machine of Mr. Hussey, Mr. Irby to Mr. M'Cormick's, and Messrs. Royal and Garnett to Mr. Burrall's. Under these circumstances the committee, of course, could award no premium, and they will report the above facts to the State Society in November next.

JOHN R. GARNETT.

July 2, 1853.

CURE FOR FOUNDER.—This being the only piece I shall give you for the Cultivator this year, I will bring forward from the 1st volume of your journal a valuable recipe

for founder—more correctly speaking, a water founder: Bleed the horse from the neck as long as he can stand up; then make him swallow one pint of salt; anoint well around the edges of his hoofs with spirits of turpentine; keep him from drinking too much water, and he will be well, I think, in a few hours.—*Farmer & Planter.*

For the Southern Planter.



Mr. Editor.—In the March number of the *Planter* I notice an article from the pen of Josiah Wm. Ware in relation to French Merino and Cotswold sheep, in which I was much interested, although I must differ with him in the comparative merits of the two breeds under consideration.

The first point I shall notice is in reference

to their breeding. He is of the opinion that they will not, or are not allowed to breed before they are three or four years old.

"You say the owners of the French Merino keep the ewes until three years old, the buck four, before they are permitted to copulate, and say it approvingly, most probable, that is desirable, if not necessary, to that breed of sheep."

Now, as I have had some little experience in breeding French Merinos, I would inform your correspondent that it is not *necessary* to wait three or four years before they will breed, but on the contrary, they are inclined to breed before they are one year old; nor is this all—many of them have twins, and will, if well kept, breed twice a year. These are “stubborn facts,” but I would not be understood to think it advisable to either let them breed so often or so young. But am of the opinion that ewes should come well nigh to maturity* before they are allowed to breed. Young bucks should be used moderately. With proper attention “a ewe of the improved Cotswold breed in three years, at the lowest calculation, with a single lamb each year, will have given in that time, in muttons alone and independent of three additional fleeces, \$24, and it might be (twins each year) \$48.”

Now, sir, the French Merino will give at least as many lambs, which, at the lowest calculation, will sell at \$100 each—\$300—and if twins, \$600, besides a fleece of at least 25 per cent. more value than the “improved Cotswold.” “How will the French Merino ever catch up with this start?” A wonderful start this, to be sure. “The French Merino can only sell his mutton once in three or four years.”

Here, again, Mr. Ware is clear off of the track. Why, sir, I have seen many a lamb in Mr. Cugnot's or Leroux's sheepfold at six months old that would weigh from 80 to 100 lbs. and so very fat would tickle the palate even of the most fastidious epicure. It is no uncommon thing in France for sheep at 18 months old to weigh 200 lbs. At present the French sheep cannot be sold for mutton on account of the high price of them, but when the time comes that the market is supplied for breeding purposes (which, by the way, will not be very soon,) I see no reason why they will not be sought for as a mutton sheep. I do not know but the Cotswold will grow larger than the French, but they cannot be more docile or fatten more readily. One of our French ewes that did not breed last season got so fat by grass that she was said to be worth \$20 for the New York butcher.

I do not wish to overrate the French sheep, but for wool and mutton combined I consider them a valuable animal, but for wool alone I believe there are other breeds of the Merino that will be quite as profitable to the wool-grower.

* It is a well established fact that in order to develop the highest degree of perfection in breeding domestic animals the sire and dam should be allowed to arrive to maturity before breeding. It is my belief that if the breeders of the Cotswold sheep pursue the course which your correspondent has adopted, they will deteriorate in size, and they will be under the necessity of resorting to new importations in order to keep up their present good qualities.

I send you a cut of our French buck “Matchless,” with a short description of him, and leave the French sheep for the present.

“Matchless” was selected by myself from the flock of Mr. Cugnot in April, 1851. He is now four years old and weighs 250 lbs. His wool is thick, fine and good length. His stock is of the highest order, and he is considered by all who see him to be one of the best of his kind. I have lately sent a buck lamb, sired by him, to Dr. Wm. L. Wight of Dover Mills, which is a fair specimen of his stock.

GEO. CAMPBELL.

West Westminster, Vt., April 22, 1853.

For the Southern Planter.

AGRICULTURAL EDUCATION.

Mr. Editor,—We could charge ourself with no task more agreeable to our feelings, nor render, as we would fain hope, a more acceptable service to your readers, than that of introducing to their notice the “Premium Essay on Agricultural Education, submitted to the Executive Committee of the Southern Central Agricultural Association, by Edmund Ruffin of Virginia.” This Essay, on a comparison with four others, each exhibiting “considerable merit in regard to this important subject,” was in the opinion of the Committee of Award considered “as decidedly entitled to the premium.” Indeed, so “valuable a document” did they esteem it, that they accompanied the report of their award with a request, involving a departure from the course usually adopted by the Executive Committee in regard to other prize essays, namely, that it might “be published at once and spread out before the agricultural community, without waiting for the publication of the Society's transactions.”—The premium awarded to the author is in the form of a beautiful silver pitcher elaborately ornamented, appropriately emblemized and tastefully inscribed with the following testimonial: “Awarded by the Southern Central Agricultural Society at their 6th annual exhibition in October, 1852, to Edmund Ruffin, Esq. of Virginia, for the best Essay on Agricultural Education.”

The typographical execution of the pamphlet containing this essay is lamentably defective, both in artistic skill and in the failure to detect numerous errors which greatly mar the sense, or entirely pervert the meaning of the writer. We may venture to hope, in dismissing this part of the subject, that when this essay (with the necessary corrections) shall again appear, in the transactions, above referred to, justice will be done to the good taste of the Society and ample amends made to its distinguished author for the mortifying garb in which he has been made to appear before the public. We pass on to the examination of the contents of this valuable essay.

The name of Edmund Ruffin, standing, by

common consent, "*primus inter pares*" on the list of distinguished worthies, who have signalized their patriotism by the devotion of themselves to the work of aggrandizing their country, would secure for it a passport to public favor. But it needs not the *prestige* of a name. Its claim to public consideration may safely be left to rest upon the basis of its own merits. It is written in the happiest style of its author. Clear and precise to a degree which admits of neither doubt nor obscurity, its arguments carry with them the force of demonstration, and its conclusions are attested with the signature of truth.

The design of the essay is to show the paramount necessity of *knowledge* to the attainment of any degree of success in agriculture, and to suggest a plan for supplying the existing destitution of the means of instruction in agriculture and its cognate sciences.

This general principle,—the necessity of knowledge,—is applicable alike to the operations conducted under the guidance of the most scientific principles and most enlightened skill, or to the ruder processes of the most ignorant and unskilful, who rejecting, as fatally pernicious, the dogmas of "book-farming," aspire to no higher attainment than a knowledge of the routine of practice "received by tradition from their fathers," whose code of agriculture maugre their contempt for "books" was embodied in the ALMANAC, and who, by erroneous induction, ascribed the success of every process and operation to the causation of the *moon!* Their proceedings in agriculture were, therefore, commenced or forborne agreeably to the moon's *phases*—its changes—its increase, or decline, and they regulated the "times and seasons" for all the necessary operations occurring in the husbandry of the domestic animals, according to the moon's apparent motions and position within the twelve signs of the Zodiac rudely configured on the pictorial frontispiece of the almanac aforesaid. But to return. Knowledge—the indispensable motive power to the whole machinery of agriculture in all its complicated parts and multifarious relations, is discussed by our author under three grand divisions.

1st. In its relations to agriculture as an *art*;

2d. In its relations as a *science*, and

3d. In reference to the administrative ability (natural or acquired) necessary in proper combination with the skill and science referred to under the two preceding heads, to secure the most perfect success in agricultural improvement and practice.

The views of the author on these several particulars are clearly and concisely expressed in the following extracts:

"Regarding agriculture merely as an art, it is no small matter, that the cultivator shall know how to order and conduct the numerous mechanical processes, all of which are essential to success, of ploughing, hoeing, draining, reaping, preparing crops for market, &c.; and to keep in good working order

"all the implements, machines and appliances for all farming processes. There are not many employments which require more of this merely mechanical capacity and skill. Yet this one is but the lowest grade of the three great departments of agricultural knowledge required; and which one, however generally and greatly deficient on nearly all cultivated lands, is more usually operative than either of the other and still more important requisites for agricultural success. The highest skill and perfection in the practical operations referred to, which belong to the art of agriculture, would be of little use, if the cultivator is not also directed by the science, which would direct why, when, how, and under what circumstances, each and every mechanical labor or process shall be either performed, modified or wholly omitted. It is not necessary, indeed, that every individual farmer shall be a scientific agriculturist—and it may be that many may do well in practice with scarcely any acquaintance with the science of agriculture. But, nevertheless, it is essential, not only for the greatest success, but for even a moderate degree, that all practice in cultivation shall be directed, as in fact it always is directed or influenced more or less, by the theories and reasoning which constitute the science of agriculture. An ignorant individual cultivator may not reason at all. But he is not, therefore, the less directed in his practice by the glimmerings of light derived from the experience of better informed farmers, who themselves derived their knowledge from some source of scientific instruction and reasoning. The sound scientific knowledge of one individual, in some cases, might serve to diffuse light to thousands of merely practical cultivators, and to influence and direct successfully the general practice throughout an extensive region. Still this aid and direction would not be the less furnished by science, even though most of those who were benefited by the aid, were totally ignorant that its source was in scientific reasoning and research. All the success of merely practical cultivators is due to their availing themselves of such lights of scientific instruction as are readily accessible and available. And all of those who deem themselves the most perfectly independent of the aid of scientific agriculture—who indeed scorn and denounce it under the contemptuous epithet of 'book-farming'—are, in fact, directed in their almost every labor and process by doctrines which were derived indirectly from scientific agriculturists. But the great drawback from the benefits so derived is, that the sources of information are so imperfect, or so remote, and the channels through which the instruction flows are so circuitous and so clogged with errors, that the lessons so received are greatly damaged in their truth and value.

"Further: A planter may be so fortunate as to be able to avail himself (through his sub-

"ordinate agents) of every proper appliance of art and skill—he may also be well versed in the science of agriculture—and yet his results may be unsuccessful, and his labors and capital be unprofitable, for want of still another requisite. This is administrative ability—or what, in common parlance, is understood as a man's having 'a turn for business,' and habits of business. It is to little purpose that both the art and science of agriculture may direct and accompany all the operations of a proprietor, if he does not also know how to govern and direct his subordinate agents and laborers, to manage his teams and all their equipments, to economize his provisions, and to guard against the manifold evils of waste of means in every department. It is this all-important capacity for good general management, (more usually a natural than an acquired faculty) which enables many cultivators to thrive, though greatly deficient in the other requisites of knowledge and skill. And it is the want of this business capacity, or of its proper exercise, which has produced to so many other cultivators loss or failure, even though exercising more than ordinary knowledge of the art or the science of agriculture or of both in proper combination.

* * * * *

"There are but few, if indeed any persons, who have attained an eminent station in all three of these departments of knowledge, which are required to make a perfect agriculturist. But there are many farmers or planters who, however falling short of these highest claims to distinction, have acquired more knowledge, and exercised more talent, in conducting their humble business, than have served, and will again serve, in many cases, for the whole intellectual capital of renowned commanders of armies, and rulers of nations!

"When so much study and research is required for attainments in the science—so much skill and judgment for the art—and so much ability and varied talent for the business in general—it scarcely needs proof, that no other pursuit more needs instruction for its young votaries than does agriculture. Yet it is almost the only business or profession which is without any regular and ordinary instruction, and in which every learner is without a teacher."

In our foregoing remarks, and with the above extended extracts, which could not be abridged without injustice to the author, in our humble effort to afford what at best must prove but a very imperfect representation of his views, in respect to the importance of agricultural knowledge and the enormous destitution of the means for obtaining it, we have left ourselves within the space allotted for this review but little room for the introduction of but a mere outline or skeleton of the plan, proposed in detail by our author, to meet this great public necessity. Referring the reader to the essay

itself, which we hope to see published and extensively circulated through individual enterprise, we can only glance at some of the more important features of the plan, leaving details entirely out of view.

1st. Then, in an agricultural State, agricultural education should be provided for at the cost of the treasury, because directly or indirectly, agriculture pays all the taxes—and also because through the enhancement of agricultural profit, by reason of the increase of agricultural knowledge, a large return would be made to the treasury in the great increase of taxable values, and also a great amount of additional means be acquired for the promotion of the general objects of education.

2d. That the proposed institution, in its endowment at the public expense, should be furnished with ample means to provide for the necessary buildings and appurtenances for thorough instruction in scientific and practical agriculture, for the payment of the salaries of the professors and for the instruction on eleemosynary principles of a select number of young men of good character, promising talents, and of suitable age, and also for the education of a larger number whose instruction should be conducted at private expense.

3d. That such an amount of manual labor should be performed by each student without regard to the profit thereof, as should be found necessary for his instruction in experimental and practical agriculture, and yet so limited as not to interfere with or disturb the course of his scientific studies, but rather promote them by its healthful effects and its salutary influence in promoting a vigorous physical development.

4th. That a farm should be provided, "cultivated regularly and continuously, and upon a proper system of rotation and general management."

5th. "The discipline of the whole establishment to be strict to the degree of military precision"—the pupils required to dispense as much as possible with domestic servants, and to conform in dress and every thing else to strict economy.

With this brief and very imperfect outline of the proposed Agricultural Institute we must conclude, not, however, without expressing the hope, as the plan is of Virginia origin, though first recommended for the adoption of a sister Commonwealth, that Virginia will be the first to adopt and reduce it to practical operation.

CH. H. WILLIAMS.

TO KEEP HORSE RADISH.—If you want to keep horseradish, grate a quantity while the root is in perfection, put it in bottles; fill the bottles with strong vinegar, and keep it corked tightly. You may thus have a supply at all seasons.—*Exchange paper.*

PAYMENTS TO THE SOUTHERN PLANTER,

From 1st to 15th June, 1853.

T. J. Michie to April 1854	\$1 00
Dr. William Gwathmey to Jan. 1854	1 00
Thomas J. Shepherd to April 1854	1 00
Col. J. M'Clanahan to April 1854	1 00
Madison Pitzer to January 1854	1 00
John W. Mead to January 1852	4 00
N. Quesenberry to January 1854	1 00
Samuel Turner to January 1855	2 00
C. H. Harrison to April 1855	1 00
E. Valentine to January 1854	2 00
Judge P. V. Daniel to January 1854	6 00
William B. Murray to April 1854	1 00
William R. Mosely to April 1854	1 00
D. M. Wood to April 1854	1 00
R. N. Trice to January 1854	1 00
Cain J. Gaines to January 1854	4 00
Col. B. Davenport to January 1854	1 00
George Isler to April 1853	1 00
John Willis to July 1853	1 00
Dr. D. C. Winfree to May 1854	1 00
Ronald Mills to January 1854	1 00
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Andrew J. Carper to January 1854	1 00
R. T. Pleasants to April 1854	1 00
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James S. Yarbrough to April 1854	1 00
H. B. Hunter to July 1854	1 00
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J. T. Hammer to January 1854	1 00
David N. Patterson to April 1854	1 00
S. D. Boyd to September 1853	1 00
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J. A. Womack to January 1854	1 00
William Payne, Sr., to January 1854	1 00
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Lewis Bailey to January 1854	1 00
Thomas H. Boswell to April 1854	1 00
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Robert Gibbony to January 1854	1 00
Dr. N. K. Foster to April 1854	1 00
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William M. Shepherd to Sept. 1853	1 00
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Richard Payne to July 1854	2 00
Orris Moore to January 1853	1 00
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Samuel Tunstall to January 1854	1 00
James S. Walker to January 1854	1 00
William K. Fry to July 1854	2 00
A. W. Cousins to January 1854	1 00
Col. Wm. A. Sheffield to January 1854	1 00
George W. Waller to January 1854	2 00
Thomas W. Mathews to April 1854	1 00
John A. M'Craw to January 1854	1 00
Wm. Appleberry Jr., to January 1854	1 00
T. J. Taylor to January 1854	1 00
Dr. George Field to January 1854	1 00
A. S. Jones to January 1854	1 00
John H. M'Kinney to January 1854	1 00
W. S. Major to January 1854	1 00
John A. Montague to January 1854	1 00

Elbert F. Redd to May 1854	\$1 00
E. J. Jordan to June 1853	1 00
Capt. W. E. Britton to January 1854	1 00
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John G. Pole to January 1854	1 00
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AN ESSAY ON CALCAREOUS MANURES,

BY EDMUND RUFFIN, a practical Farmer of Virginia from 1812; founder and sole editor of the Farmers' Register; Member and Secretary of the former State Board of Agriculture; formerly Agricultural Surveyor of the State of South Carolina, and President of the Virginia State Agricultural Society; fifth edition, amended and enlarged.

Published by J. W. Randolph, 121, Main street, Richmond, Virginia, and for sale by him and all other Booksellers; fine edition, Svo., printed on good paper, and strongly bound, library style \$2; cheap edition, 12mo. \$1 25—copies sent by mail, post paid, to those who remit the price.

A large proportion of this publication consists of new matter not embraced in the preceding edition. The new additions or amendments serve to present all the new and important lights on the general subject of the work, derived from the author's later observation of facts, personal experience and reasoning founded on these premises. By such new additions the present edition is increased more than one-third in size, notwithstanding the exclusion of much of the least important matter of the preceding edition, and of all portions before included, that were not deemed essential to the argument and necessary to the utility of the work.

"This work is from a Virginia gentleman, whose contributions to agricultural science have already given an extensive popularity. Mr. Ruffin is a practical farmer, of great intelligence, and is eminently competent to impart information on the subject, which has for so many years engaged his attention."—*Methodist Quarterly Review*.

The Southern Planter, in speaking about the cultivation of Irish potatoes and liming, says:

"But for the details of that business, we would refer our correspondent to a book, which if he has not now, we beg for his own credit that he will get as soon as he goes to Richmond. We mean the final edition of the Essay on Calcareous Manures."

"The farmers of Virginia have just reason to thank both the author and publisher for this enlarged and improved edition of a most valuable book."—*Hon. Willoughby Newton*.

je—t

TO THE FARMERS AND AGRICULTURAL COMMUNITY OF VA.

THE subscriber is desirous to make known to the above, an article of manufacture of Chemical notoriety, namely, SUPER-PHOSPHATE OF LIME, allowed to be one of the most efficacious Manures ever yet adopted in this or any other country, for its well known properties of regenerating and fertilizing the barren and worn-out soil. Its first introduction was into England, some ten years since, when from its then pronounced magic effect, a patent right was granted to its inventor, the celebrated Professor Law, of London, who stands now unrivalled as one of the first Chemists of the day. Having had the honor of graduating under him, and together with some years of practical experience in the manufacturing of this article with him, gives a sufficient confidence to state that the A No. 1 of my present manufacture cannot be equalled in this vast continent, being the sole inventor and introducer of it into this country. Should there be a doubt as to its truthfulness, my Diploma, received from the New York American Institute, will fully attest of the correctness of my statement, together with a host of the highest testimonials from the Farming and Agricultural consumers of my Manure for the last twelve months while there.

I can also state with pleasure having received many kind letters from mere strangers to me, requesting of me to refer any one who may feel skeptical of the powerful influence it has over the most barren or useless land that can be found—in a great many instances, parties were dubious of buying more than some 50 or 100 pounds to make trial; the same parties now purchase in Tons, and feel proud in making it known to their surrounding farming neighbors, who seemed quite astounded at the crops produced by the application of this marvellous process, which enters into the composition of all plants, and the importance of invaluable constituent to the agriculturalist will be easily understood, when the reader is informed that no plant will grow upon a soil denuded of it. Phosphates of lime is being continually removed and abstracted from the soil, and taken up by the plants in solution for their nourishment, and unless such an equivalent be returned, diminution of fertility must naturally be the issue. I apprehend the efficacy of ground or crushed bones on the soil is well known to the American farmer.

I will presume to point out the advantage Super-phosphate of Lime has over bones. Bones are insoluble in water, and have first to be decomposed before they can be incorporated with the soil—such decomposition taking a long time. From authenticated writers and scrupulous experimenters, it has been acknowledged that twenty bushels of Super-phosphate of Lime, will have the desired effect of 100 bushels of unprepared bones. The reason of such fact is on account of its being in a state

of solution shortly after having been applied to the soil, and taken up by the plants, which derive their strength and growth from the soil in no other form.

The subscriber offers his manufactured Super-phosphate of Lime as a chemically pure and genuine article; a perfect Super-phosphate, with the addition of guano and other fixed salts, &c., only known to himself—containing ammonia and other constituents necessary to furnish to the soil that which it has been robbed of by previous growth. It is quite as effective as GUANO, but much more durable as a manure, and less volatile than any other.

To be obtained in bags or barrels, of

C. B. DE BURG,

Agricultural Chemist, Williamsburg, L. I.

Where purchasers may rely upon obtaining a warranted, pure and genuine article, styled A No. 1.

To prevent deception being practised henceforward, all packages will be branded with the manufacturer's name.

C. B. DE BURG.

Affixed are the names of gentlemen of acknowledged celebrity and standing as Analytical Chemists, who have passed their judgment upon it.

JAMES R. CHILTON, Esq., M. D.,
THOMAS ANTISELL, Esq., M. D.,
WILLIAM W. ELLETT, Esq., M. D.,
ISAIAH DECK, Esq., M. D.,
JOHN H. CURRIE, Esq., M. D.

P. S.—My representative, Mr. J. P. O'NEIL, shall do himself the pleasure of visiting Virginia on a tour of business, when he shall be most happy to receive orders and impart such information as may be required of him relative to this matter—he shall also bring on with him a supply of Pamphlets, with full particulars, which will be found most essentially useful to the agricultural community.

PRICE—\$45 for 2,000 lbs. from the manufactory.

Williamsburg, L. I.

S. M'GRUDER & SONS,

July—3m

Agents, Richmond, Va.

EAGLE FOUNDRY.

THE subscriber having removed to the large Foundry, just erected by him and fitted out with machinery of the latest and most approved style, is, in addition to the manufacture of Tobacco Flattening Mills, prepared to receive orders for Stationary Steam Engines, Saw and Grist Mills, Agricultural Machines, Tobacco Presses of every description, and all kinds of Iron and Brass Castings. He pledges himself to execute faithfully, and with dispatch, all work entrusted to him, and respectfully solicits a call from his friends and the public generally.

The highest cash prices paid for old cast iron, brass and copper.

PHILIP RAHM,

je—1y Cary, between Pearl and 15th sts.

ATKINS' SELF-RAKING REAPER.

THIS machine is now offered to the public and warranted to be a good self-raking reaper. It is also believed to be a good mower, but not yet having been sufficiently tested in grass, (though it soon will be) it is not warranted to be equal to a machine made mainly or wholly to mow.

The raking apparatus is of novel and very simple construction, and not liable to derangement, and every farmer who has seen it in the harvest field, says it performs the raking better than a man can possibly do it.

Price of machines at Chicago, \$175, of which, \$75 must be paid on giving the order, \$50 upon successful trial, and \$50 in note payable 1st December.

The machines are thoroughly built and warranted.

☞ Descriptive circulars, with cuts, sent to post-paid applications.

J. S. WRIGHT,
"Prairie Farmer" Warehouse, Chicago, June,
1852. july-3t

ANALYSIS OF SOILS, &c.

THE undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c. at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg.

Persons desiring further information will please address

WILLIAM GILHAM,
Prof. Chem. and Agriculture, V. M. I.
Feb. 1, 1852. Lexington, Va.

CHOICE POULTRY.

THE subscriber offers for sale the following varieties of *pure blooded Fowls*, viz: COCHIN CHINA or CANTON FOWLS; BLACK, WHITE, BUFF and BROWN SHANGHAI; CHITTAGONGS or GRAY SHANGHAI.

The above are the largest and best variety of fowls bred in this country, and are from stock originally imported by the subscriber. Gentlemen, Poultry-keepers and others, desirous of procuring choice Poultry may depend upon the above stock being purely bred and warranted true to their name. Address

CHARLES SAMPSON,
West Roxbury, Mass.

The different varieties of these beautiful fowls may be seen at my residence on First Street, between Main and Cary Streets.

W. A. BUTTERS, 139 Main Street.
Richmond, Nov. 1, 1852-1y

BOOKS, PIANOS, MUSIC, &c.

NASH & WOODHOUSE, Wholesale and Retail Dealers in BOOKS, PIANO FORTES, STATIONERY, Music, &c. 139, Main St. Richmond, Virginia.

Constantly on hand; a full supply of standard AGRICULTURAL WORKS. oc-tf

FOR SALE.—A fine farm near Marysville, Buckingham county, Virginia; well timbered, has good drinking water, fine grass, and is a desirable location for health and comfort. Farms in Talbot county, Eastern Shore of Maryland, on the salt water, in healthy sections. Also, in Baltimore county, within 12 miles of the city.

Cotswold Rams, Ewes, Ram and Ewe Lambs from the best flocks in the United States. Also, Southdown Ram Lambs from fine flocks.

Shanghai Fowls from different importations, and as grown by Professor James M'Clintock, for which, I am the only Maryland agent.

Moor's Patent Premium Wheat Drills, on more accommodating terms, with the improvements.

Letters of inquiry and orders, post paid, will receive prompt attention.

MARTIN GOLDSBOROUGH,
Agent, Harrisonville, Baltimore Co., Maryland.
july-1f

THE SUBSCRIBER has for sale yearling and two year old BUCKS, of the New Oxfordshire or Cotswold breed, which he will sell any time when called for, and has no hesitation in saying this breed of sheep are superior to all others, for large carcass, heavy fleece, early maturity, constitution, and defies all other breeds for profit. This flock has been bred from the best ever imported, the sire having clipped eighteen pounds of well washed wool; and a small amount of wethers, slaughtered in Philadelphia, in February, weighed as follows:

Live weight, 374, 309, 307, 285, 271, 254 lbs.
Dead " 269½, 213, 203, 201, 181, 160½ "

No. 1 being the heaviest sheep ever slaughtered in the United States.

☞ Persons are invited to call and see for themselves, or communicate by mail to

WILLIAM REYBOLD,
july-3t Delaware city, Delaware.

FOR SALE.—A thoroughbred Bull of the Ayshire and Durham breed, in fine health and vigor—color, rich red, with slight white spots in the flank, characteristic of the Ayshire breed. Said Bull is immediately descended on both sides from Imported Stock. For testimonials of stock, &c. enquire of the Editor. oc-tf

THE DAILY EXPRESS, published at Petersburg, Va. is the cheapest daily paper published south of James river, Virginia. It is devoted almost entirely to news matters of every description, and eschewing politics, may be emphatically styled a "Newspaper." Three hundred and twelve copies, which embraces the whole year (Sundays only excepted,) will be furnished at the unprecedented low price of four dollars per annum. Address

AND. F. CRUTCHFIELD & Co.
ap-tf Petersburg, Va.

PLANTATION BOOK.

J. W. RANDOLPH, Richmond, Virginia, has just published the *Plantation and Farm Instruction, Regulation, Record, Inventory and Account Book*, for the use of managers of estates, and for the better ordering and management of plantation and farm business, in every particular, by a Southern Planter. Order is Heaven's first law—*Pope*. Price \$2, or six for \$10; a larger edition for the use of cotton plantations, price \$2 50.

CONTENTS.—Actual number of pounds to a Bushel of Wheat, Articles received for use of Plantation, Brick-Kiln, Births of Negroes, Balance Sheet, Cows, Cultivation, Contents of a Corn Crib, Clothing to Negroes, Diameter of a Horse Mill, Deaths of Negroes, Directions how to use this Book, Expenses and Sales for the Year, Form of a Contract with Manager, Force of a Draught Horse, Horses, Hogs, Instructions to Managers, Implements, Journal or Daily Record, Medicines, Manure Tables, Mechanical Power, Effect of the Labor of an Active Man, Inventory of Negroes, Oxen, Washington's Letters to his Steward, Plantation Management, Police, Ploughing Rules, Planting Distances, Physicians' Visits, Quantity and Value of Produce Made, Quantity of Work of a Man and Two Horses, Rules for the Government and Discipline of the Negroes, Rotation Tables for Cultivation of Crops, Rural Economy, Sheep, Steam Engines, Stock and Implements, Tools, &c. used by the Negroes, Weight of Materials, Weights and Measures, Wind Mills, Water Wheels, When a Horse Draws to Advantage, &c. &c.

There are extra sheets for monthly and yearly reports, for the use of those who do not live on their farms. The Book will be sent by mail free of postage to any one who will remit the price in money or postage stamps.

This Book is by one of the best and most systematic farmers in Virginia; and experienced farmers have expressed the opinion, that those who use it, will save hundreds of dollars.

"Every farmer who will get one of these Books, and regulate all his movements by its suggestions, cannot fail to realize great benefits from it. We cannot too highly commend it to the consideration of agriculturists."—*Richmond Whig*.

"It will prove a most valuable assistant to the planter, manager or overseer, and a work that will facilitate them greatly in the transaction of business."—*Richmond Dispatch*.

"The Book we should suppose to be indispensable to any one having the management of a large estate."—*Richmond Republican*.

"We hope many farmers will buy the work, and make an effort to keep things straight."—*Southern Planter*.

"It is full of useful information and is well calculated to induce a methodical system, industry and energy especially vital to a successful and profitable cultivation of mother earth."—*Richmond Enquirer*.

June—1f

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 should 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. Faulkner.

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.

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

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

Fessenden'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 all of the late Works on Agriculture, Horticulture, and Raising Stock, of any celebrity.

Richmond, March 12, 1851.—1v

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THRASHING MACHINES, REAPERS, &c.—The Subscriber continues to manufacture Stationary and Portable Threshing Machines, with or without horse-powers, made in the most substantial manner. He would call especial attention to his new portable horse-power, made to suit four, six and eight horses.

The Eight Horse Machine can be moved with a common farm wagon without changing the common body, and can be loaded or unloaded by three hands.

I am manufacturing the following valuable machines: Bamborough Wheat Fans, Behel's Patent Wheat Fan, and common Fans of different sizes—Straw Cutters, Corn Shellers, &c.; and have for sale the usual variety of Agricultural Machines.

Hussey and M'Cormick Reapers and Mowers, both highly approved and extensively used. Information furnished in respect to either on application by letter or otherwise.

H. M. SMITH,
Corner Main and 19th Sts.

je-2t

SCHOOL FOR SMALL BOYS.

HAVING employed a competent teacher to educate my children, I wish to get five or six boys, not more than twelve years old, as boarders. The whole number of pupils will not be allowed to exceed twelve or fourteen. The teacher is a good classical and mathematical scholar and a gentleman in whose capacity, fidelity and high character I have entire confidence. The school will commence the first of October and terminate the middle of August, with a short recess at Christmas.

TERMS—\$130 per annum for every thing.

FRANK: G. RUFFIN,

July, 1853.

Shadwell, Albemarle.

RIDGWAY SCHOOL.—The next session of my school will begin on the 15th of August, 1853, and end on the last Friday of June, 1854. There will be a vacation of three weeks at Christmas. The expenses of a whole session, including all charges for tuition, board, lodging, washing, fuel, lights, &c., are \$200. If a pupil is engaged for less than a whole session, I charge for the time he attends, at the rate of \$22 a month.

My whole time and attention are devoted to the school. I have two assistant teachers, Mr. W. N. Bronaugh and Mr. T. A. Minor, of whose qualifications I have the amplest assurance. Greek, Latin, French, German, Italian, Mathematics, the rudiments of Chemistry and Natural Philosophy, and all the branches of English are taught in the school. My Post Office is *Charlottesville, Va.*

je-2t

FRANKLIN MINOR.

ANALYTICAL LABORATORY

FOR THE ANALYSIS OF SOILS, &c.—The undersigned announces, that through the liberality of the Planters of the adjacent counties, there has been established, in connection with the Department of Chemistry in Randolph Macon College, an Analytical Laboratory, for the analysis of soils, marls, plaster, guano, minerals, &c., and for instruction in Analytical Chemistry. The Laboratory will be furnished with the most approved apparatus and choice re-agents, with every desirable facility. He has associated with him Mr. William A. Shepard, who was recently assistant to Professor Norton, in the Yale Analytical Laboratory, and who comes with ample testimonials of skill and capacity. Young men can pursue any studies in the College they may wish, while they are receiving instruction in the Laboratory. Copious written explanations will always accompany the reports of analysis. The charges for analysis and instruction will be moderate—the design being to make the Laboratory accessible to the people at large. Packages left with Messrs. Wills & Lea or Smith & Dunn, Petersburg, Virginia, will be forwarded, free of charge, to those who send them. For further information, address

CHAS. B. STUART,
Professor of Experimental Sciences, Randolph Macon College, Va.

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