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

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For the Southern Planter.

SCIENTIFIC AGRICULTURE.

BY PROFESSOR GILHAM.

NUMBER III.

(Continued from page 282, Vol. XII.)

In our last number we showed that the greater part of every vegetable, or vegetable product, is made up of the four elements, *carbon*, *oxygen*, *hydrogen* and *nitrogen*, which, it will be remembered, are called the *organic* elements of plants. We now propose to say something in relation to those substances which are always found to constitute the ash of plants after burning, and which are called its *inorganic* constituents.

Though these, in most cases, bear but a small proportion to the entire plant, generally not more than from one to five per cent. of the mass, still, as we shall see as we progress, the substances which compose it are just as necessary to complete the vegetable structure, as the more abundant organic elements. It might be supposed at first sight that the ash of plants was accidental; that from the manner in which they take up water by their roots, and with it the most of whatever it holds in solution, the composition of the ash would depend, in a very great degree, upon the nature of the soil producing the plants; and that the quantity of ash would be dependent upon the amount of solid matter held in solution by the water. But such is far from being the case. It is found that no matter what be the character of the soil, or what the circumstances of the growth of the plant, the *same plant, when matured, yields an ash composed of the same substances, and in nearly the same proportion.* So certainly is this the case that a knowledge of the composition of the ash of plants that a particular soil produces, supplies much information in relation to the composition of the soil itself. We know that that soil must be capable of supplying all the inorganic bodies found by previous analysis to be present in the ashes, *otherwise the plants would have refused to mature.*

Again, the ashes of different species of plants grown upon the very same soil are found to differ, and this difference becomes greater in proportion as the difference in the species widens. Wheat and Indian corn, for instance, grown on the same soil differ in their ash, but the difference would be much more marked, if instead of comparing two grain crops, we were to compare one of them with a root crop, such as potatoes or turnips.

We, therefore, conclude that the inorganic matter which constitutes the ashes, is, although small in quantity, a necessary part of plants; and consequently that supplies of it must be within their reach, or they cannot mature. The substances found in the ashes of plants, and which may be said to constitute the inorganic food of plants, are *potassa*, *soda*, *lime*, *magnesia*, *oxide of iron*, *oxide of manganese*, *silica*, *chlorine*, *sulphuric and phosphoric acids.* Every plant contains nearly all of these, in small quantity, though sometimes one and sometimes another is absent; each taking what is necessary to it.

But while they all require nearly the same substances, there is a striking difference in the amount of ashes left by different plants, (showing that they require different amounts of inorganic food,) and an equally striking difference in the proportions of the various substances which compose their ashes. A familiar illustration of these truths may be drawn from a comparison of the ashes of the various kinds of wood; every body knows that pine in burning leaves very little ash, while hickory or oak, leaves a much larger amount; and that the ashes of hickory are very highly prized for making lye for soap, &c. while there are many kinds of wood whose ashes are regarded as almost worthless for such purposes. In the one case the asbes abound in potassa, the active principle of the lye, while in the others the proportion of this alkali is small, and hence the lye from them must be weak. After a field, by long continued cropping, is exhausted, and turned out as worthless, it is soon covered with "old-field" pines, or some analogous growth; but never with young hickory, walnut or locust, and for the simple reason that the field, although exhausted, has sufficient inorganic matter left to supply the small quantity required by a growth of pine, but not enough to meet the much greater demands of a growth of either of the abovementioned trees. Again, it is within the observation of every one, that the spontaneous vegetation on a soil is a pretty good index of its quality; that such trees as

hickory and walnut are the product of a good soil; chestnut of a lighter, and pine of a still lighter. Now all this results from this difference in plants with respect to the amounts and proportions of inorganic food required; the hickory can grow only in those situations where abundant supplies of food are to be found, while the pine takes undisturbed possession of the sterile mountain side, because it there meets with supplies sufficient for its wants. One class of plants will always be found in limestone regions, because it is there they meet with soils rich in lime; another makes its home upon the sea shore or on the borders of salt ponds, because it is only when near the salt water that it meets with plentiful supplies of soda—and in almost all cases where particular plants manifest preferences for certain soils or for particular localities, the preferences result from the peculiar demands of the plants with respect to their inorganic food.

Different plants not only differ in the amounts and proportions of the inorganic matter they contain, but the same differences are to be observed in the various parts of the same plant. The grain of wheat, for instance, yields but from one to two per cent. of ash, the stem some six or seven, and the leaf some seven or eight. The dried roots of turnips or beets leave but one or two per cent. of ash, while the leaves often yield some twenty or thirty. The ash from different parts of the plant differs very materially in composition, a fact which is of great practical importance to the farmer. The grain of wheat, for example, yields an ash in which phosphoric acid is the leading ingredient, while the straw leaves an ash, three-fourths of which is silica. The principal inorganic substance taken from the soil in the grain is, therefore, phosphoric acid, and by the straw, silica. If now the farmer sells his wheat and returns the straw to the land, a very large per centage of the inorganic matter removed by the crop will be returned; but the return of the silica of the straw can never restore the phosphoric acid removed in the grain, and no matter how skilfully the land is worked, it must eventually become deficient in this acid, unless supplied from some other source.

The following table, taken from the late Prof. Norton's Elements of Scientific Agriculture, is worthy a careful examination:

TABLE *showing the per centage of the various Inorganic Substances found in the Ash of certain Cultivated Plants.*

	Indian Corn.	Wheat.	Wheat Straw.	Rye.	Oats.	Potatoes	Turnips.	Hay.
Carbonic acid,	trace	- -	- -	- -	- -	10.4	- -	- -
Sulphuric acid,	0.5	1.0	1.0	1.5	10.5	7.1	13.6	2.7
Phosphoric acid,	49.2	47.0	3.1	47.3	43.8	11.3	7.6	6.0
Chlorine, - -	0.3	trace	0.6	- -	0.3	2.7	3.5	2.6
Lime, - - -	0.1	2.9	8.5	2.9	4.9	1.8	13.6	22.9
Magnesia, - -	17.5	15.9	5.0	10.1	9.9	5.4	5.3	5.7
Potassa, - - -	23.2	29.5	7.2	38.8	27.2	51.5	42.0	18.2
Soda, - - - -	3.8	trace	0.3	4.4		trace	5.2	2.3
Silica, - - -	0.8	1.3	67.6	0.2	2.7	8.6	7.9	37.9
Oxide of iron,	0.1	trace	1.0	0.8	0.4	0.5	1.3	1.7
Charcoal and loss,	4.5	2.4	5.7	- -	0.3	0.7	- -	- -
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

This table not only shows that different plants, and different parts of the same plant, differ widely as to the amounts of inorganic food required, but it shows that they may be classified with reference to the inorganic matter to be found in their ashes. We see that in the grains phosphoric acid is the predominating substance, nearly one-half of the ash being composed of it, while in the straw silica is greatly in excess, and the proportion of phosphoric acid very small. There are also considerable amounts of potassa in the grains, but less in straw. Hence the grain crops draw upon the soil for silica, phosphoric acid and potassa more largely than for any of the other bodies.

By reference to the column for potatoes we find the proportion of phosphoric acid very much less than in the grains, and the potassa very considerably greater. The other root crops, such as turnips, beets, &c. all have a large proportion of potassa in their ashes; and hence they all draw largely upon the soil for this alkali. There is also a large proportion of potassa in peas and beans.

In the ash of hay we have silica predominating as in straw, and for the same purpose, to give strength and toughness to the stem; the next most abundant substance is lime, then potassa, and after that phosphoric acid. Clover contains much less silica than meadow hay, but the lime is in greater quantity. Lime abounds in all the grasses, and this fact explains why it is that they flourish so luxuriantly in limestone regions, where the soils are plentifully supplied with lime. It explains,

too, why it is, that on lands that have been heavily limed or marled, the farmer finds it difficult, in many cases, to keep his fields clear of grass. Lime is also the prevailing constituent in the ash of tobacco.

From the above we see that vegetable productions may be classified with respect to their ashes—1st, to include all those, such as the grains, in which phosphoric acid is the leading ingredient; 2d, to include those in which silica predominates; 3d, to include those, as the root crops, in which potassa is the prevailing constituent; and 4th, to include those, such as the grasses, tobacco, &c. in which lime prevails.

Different parts of the same plant must frequently be classified differently; thus the grains, as we have seen, drain the soil of its phosphoric acid, while the stems, which bear this grain, take up large amounts of silica. The tubers of the potato are rich in potassa, while the stems, or tops, contain much lime. Thus the grains are in the first class, and their straw in the second; the potato is in the third class; potato tops in the fourth, and so on for various other plants. But while the plant, or part of the plant, from the predominant inorganic substance it contains, is placed in a particular class, it frequently happens that an almost equal demand is made upon the soil for some other body. For example, the grains draw heavily for phosphoric acid, and at the same time some of them draw almost as heavily for potassa. Peas and beans, according to Boussingault, may be regarded as potassa plants; they also contain very considerable amounts of phosphoric acid—more, when we take the yield per acre into the account, than would be required for an average crop of wheat. The cotton plant, according to an analysis made in the laboratory of the late Professor Norton, draws most heavily upon the soil for phosphoric acid; it at the same time requires nearly an equal amount of potassa and lime.

We have seen that plants differ as much in the per centage of inorganic matter required for their uses as in the proportions; hence we should expect as great diversity in the quantities of inorganic matter removed from the soil by different crops as would be found in the composition of the ashes of these crops, supposing even that the same soil produces equal amounts of the different cultivated plants. But all know that a soil which produces twenty bushels of wheat will most generally produce forty bushels of corn, and that there are as marked differences in other crops. Therefore, in considering the effects of different crops upon a soil, it is proper to consider, first, what are the principal substances removed in a given crop; second, what relation does the weight of the ash bear to that of the entire crop; and third, what is the yield of the land in this crop, as compared with the yield of the same land in the various other crops cultivated by the farmer.

Let us consider for a moment the effects of an average crop of wheat and corn, under the supposition that the straw and stalks are returned to the soil. Here we have two grain crops, and they differ but little as to the kind or proportion of inorganic matter removed by each. But if we look for a moment at the yield of each per acre, a difference is observed that the mere analysis does not point out. In these two grains we may assume the per centage of ash as the same, and still one may be called a "delicate" and the other a "gross" feeder. A crop of twenty bushels of wheat will remove some thirty pounds of inorganic matter in the grain, of which nearly one-half is phosphoric acid and one-fourth potassa. Now since the land which produces twenty bushels of wheat will produce some forty of corn, the crop of corn must remove a great deal more inorganic matter than the wheat, and since the two grains yield ashes which are very much alike in composition, it follows that the crop of corn removes much more of the very same bodies, such as phosphoric acid, potassa, &c. than the crop of wheat does. A large crop of wheat may remove in the grain and straw some forty pounds of phosphoric acid, but a corresponding crop of corn would remove from sixty to seventy-five pounds of the same acid.

Boussingault has given us the results of some very careful analyses of the ashes left by the various crops grown on the same land in a regular rotation, from which we select a few numbers for comparison. The crop of wheat, about eighteen bushels to the acre, removed 25 pounds of inorganic matter, and the straw removed 180 pounds, of which 121 were silica. The crop of clover, about a ton and a half to the acre, removed 284 pounds, of which 70 pounds were lime and 77 were potassa.

The quantities of lime and potassa taken by the clover were at least three times as much as the quantities of these same substances taken by the wheat and straw together. The ash of clover contains but six per cent. of phosphoric acid, but where the amount of ash is so great even this small per centage makes the total amount of phosphoric acid in the crop of clover more than it is in the wheat.

Again, the crop of potatoes removed 113 pounds of inorganic matter to the acre, over fifty pounds of which were potassa and soda; the potato tops removed 300 pounds, 135 of which were potassa and soda, 30 of phosphoric acid, &c.

These examples are sufficient to show that it is a matter of no little consequence to the scientific farmer to have some correct information in relation to the composition of the ashes of the various plants he cultivates, in order that he may form some idea of the quantity and quality of the substances annually removed from his land in his crops.—They also show the importance of restoring to the soil all those parts of the plant which are not the special objects of cultivation, such as the straw, leaves, &c.—for besides making

a positive addition to the store of organic matter in the soil, they return much valuable inorganic matter.

The study of the inorganic food of plants becomes a matter of consequence in connexion with the subject of rotation of crops, for the necessity of rotations results from the fact that different plants require very different substances as food, or require them in different proportions.

In what has been said we have assumed that the inorganic bodies of plants are derived exclusively from the soil; and that the soil supplies them all will become manifest when we consider that the atmosphere does not contain any of the substances found in the ash of plants. Of course, then, the soil, to be productive, must contain each and every one of the inorganic bodies to be found in the ash of plants, or they must be added to it as manure. This leads us to a consideration of the nature and properties of the soil, which we shall attempt in our next.

For the Southern Planter.

THE HESSIAN FLY, THE BLACK FLY, AND THE JOINT WORM.

[Extracts from the Memoirs of the Pennsylvania Agricultural Society.]

Mr. Editor,—Since writing you before upon the above subjects I have obtained additional information upon them, which it may be proper to communicate for your paper.

In September I staid a few days with a practical farmer in New York, on the North river, and in the course of conversation the appearance of my wheat last spring was mentioned. He at once remarked that his own had a very similar appearance at the same time, and subsequently, after he had read my communication in your paper, he said he believed they had the same disease in New York that we had in Virginia. Some time after that I was informed by a gentleman from Maryland, before he had heard of the tufty condition of our wheat, that his mother's had a like appearance last spring, looking "as if guano had been scattered irregularly over the land." To my mind the black-fly was present in both these cases—if nothing else. These are recent instances. In the Memoirs of the old Pennsylvania Agricultural Society, (copies of which have recently fallen into my hands, for the first time,) the same disease, or diseases, are minutely described. In Vol. I. (which is not by me, and from which I cannot extract,) there is a communication from L. Hollingsworth, dated Elkton, 1807, upon sedgy wheat, with comments by Judge Peters. In Vol. II. p. 287, he again writes, "June 24, 1810—Gentlemen, a few years ago I informed you of a distemper in my wheat, which I call a decay in the root; others call it sedge wheat. *This malady continues with increasing spread.*

"From information that on land where the red chaff had been destroyed, the white wheat would succeed by sowing it the next rotation of crops, last fall I tried the experiment on about two acres, in a field that had been destroyed three years ago, by sowing part of the land that had been affected with red chaff and part with white wheat. The red chaff languid; white recovering.

"From about the 15*th of March* to the *middle of May* the whole appeared nearly dead, or what is generally called sedge wheat. At present the white wheat is making considerable progress; and, if it ripens clear of rust, may be half a crop, while the red chaff don't seem to recover. As there must be a cause for effects, my hypothesis, or reasoning on this subject is, that it is well known that the red chaff bearded wheat don't stool or throw up as many stalks from the root as other wheat, it requires more seed to produce a crop equally thick, of course, may not put out as many side roots, but depends more on the main tap-root for nourishment.

"The tap-root being injured prevents its recovering as other wheats do. This may be the cause of the red chaff being injured by this pernicious insect more than other wheat. Hoping some abler hand may make further discoveries on this pernicious insect. It appears all sorts of wheat are exactly alike, but the bearded don't recover as other wheats do. Rye is proof against it."

Among other comments on the above, Judge Peters says:

"1. The best remedy would be to discontinue, by general consent of a neighborhood infested with the worm or insect, the culture of wheat. It may be an indication of Nature that a change of crops is indispensable. And they may as well do willingly that to which necessity will compel.

"2. I proposed fall or winter ploughing, and frequent winter harrowing, to expose the worm or larvæ of the insect to the severity of frosts.

"3. To lime lands infested, and to spread salt, (marine,) plaster of Paris, or any other substance known to destroy insects or worms.

"4. To try experiments on the living worm, or insect, be it moth, beetle, fly, or in whatever shape the enemy may, in any stage of its existence, be found; to discover what will kill or banish it. The change of one species of wheat for another does not seem effectually to answer the purpose. * * * * *

"The Southern '*decay of the root*,' most certainly owing to insects, may oblige farmers afflicted with the misfortune to banish many bad habits, such as sowing wheat among Indian corn, and laboring over a vast surface for very little proportionate profit, &c. &c."

Is not this the black fly of last spring? and it seems to have attracted then, as now, attention first at the South.

In Vol. III. p. 165, is a long and well writ-

ten essay upon "The Failure of the Wheat Crops, and the Insects by which they are assailed," by Jas. North, dated "Sbaron, Bucks County, 1823,"—about the time, Mr. Editor, that we were so afflicted in Culpeper county, as mentioned in my former communication. From this essay I will make some extracts, and *italicise* some portions, omitting by far the largest part.

"*Sir*,—The failure of the wheat crops of the present year, occasioned principally by the depredation of insects, and generally attributed to the Hessian fly, (cecidomyia—destructor of hay,) seems to bring us to a point in which we ought at once to determine either to abandon the crop or devise some decisive measures for its future success. * * A failure has taken place to an alarming extent throughout a great portion of our wheat country. * * From almost every quarter we have accounts of the most distressing kind. Many farmers have not gathered *the amount of seed sown; some have found their fields not worth reaping;* and the disaster may be considered as generally lessening the product more than one-half, and that too *after the fairest prospect of an abundant crop.*

"The wheat crop is injured by at least *four* descriptions of insects—*that which causes the disease called* sedge *or* stunt—*the Hessian fly—a worm that is found in the stalks near the roots and about the joints*—and another worm that causes the early change of color of the ear. * * The insect that causes sedge or stunt I am not able to identify, but I presume the damage is done late in autumn or winter, as when in spring we discover the disease we cannot find the insect. The root of the original shoot is then destroyed and the plant soon afterwards throws out new roots which produce weak stalks of a *sedge-like* appearance. Some observers contend that it is a small worm, but the time when this worm has been seen leads me to suspect that it is attracted by the decayed root, and therefore is a consequence—not the cause of disease. I should rather suppose that it is a species of aphis or plant louse which does the mischief: it is certainly something that harbors in the ground. It appears that the disease is confined to the bearded wheat, especially red chaff; and that by sowing the bald species, good crops have been raised when the other sorts had entirely failed; so that changing the seed has some effect; nevertheless I suppose that all kinds are more or less injured; and to get rid of the evil effectually we must apply the remedy to the soil. I have recommended salt; ashes might be good; and should perhaps be applied at the time of sowing, and be harrowed in with the grain. I, however, *have had but few opportunities of examining the disease*, and I here mention it chiefly to arrest the attention of others.

"The fly evolves, &c. * * I would, however, observe that the fly prefers the weakest plants, and hence the reason that the latest sowing frequently suffers the most; and hence, also, the advantage of manuring; indeed there is a difficulty in making a deposit upon a broad leaf of a luxuriant plant—the fly *having to grasp it with its claws* in order to press the egg into the gutter." (Query, is this a fact?) * * "In a letter which I some time ago addressed to Mr. Skinner, I took occasion to say that I believed my communication to the Philadelphia Society for promoting agriculture was the first publication of the true deposit of the Hessian fly, but I have since found that Gen. J. H. Cocke published his observations more than two years earlier. I regret that I was not apprised of his discovery at the time I wrote, as I would not intentionally detract from the merit of any one. General Cocke, however, has only noticed the fall deposit. Dr. Chapman of Bucks county, appears to have been the first observer, but he omitted to publish his remarks, and he has only traced two generations instead of three, having blended the first and second. The worm which is found in the stalk, is about three-sixteenths of an inch long, pale yellow, somewhat opaque about two-thirds its length, with two brown spots about its mouth. I have not yet seen the winged state, but am taking measures to ascertain it. There are three generations in a year, and the deposits are made a few days earlier than those of the Hessian fly. The ravages of the first generation have usually been confounded with those of the fly, as the plants decline in both cases about the same time, and in the same manner;(?) but such as are affected by this insect can readily be distinguished by an enlargement of the culm near the root. The second generation *is lodged about the several joints*, and may frequently be found in apparently healthy plants. This generation must *materially lessen the quantity of grain, and I conceive is the principal cause of the bad product from the straw.* The third generation, in the autumn, is lodged in the manner of the first, and the damage has also been charged to the Hessian fly.

"As the Hessian fly and the insect last treated of accompany each other in point of time the same means will destroy both."—Questionable. "It has been asserted that sowing oats among wheat would protect the latter by inducing a deposit on the latter." Stated not effectual. "A late writer has asserted that the Hessian fly deposits its eggs on the grain of the wheat, and that steeping the seed is an effectual remedy." Stated not effectual. "Pasturing has been recommended, and when accomplished immediately after the spring deposit, or while the insect is confined to the leaf, it may be effectual; but the work must be completed in a very few days, and even then it might be a dangerous expedient, unless on strong grounds, and the season should prove favorable; besides it would require close examination, to determine the precise time. If done before the sexual intercourse that takes place, such is the sagacity of the insect that

it would await the renewal of the plants, or until provision for its progeny be made—nevertheless if done by only a few individuals, say about the 20th of April, they indeed might derive an advantage by causing the flies which are in their fields to seek a lodgement elsewhere; but this would be injuring others in the same degree that they are benefited.

"Particular species of wheat are supposed to resist the attack, but it appears to me that the fly *prefers* the late kinds, therefore, those who sow early sorts (*I mean early spring growth*) escape by throwing the fly upon their neighbors; no *general* good results, and if we were all to sow early wheat none would be benefited, unless a late kind were sown amongst it, and both being distributed over the field, the fly would prefer the late, and so only thin the plants without injuring the crop; but the difficulty would be in continuing the separate kinds, as by a mixture degeneration would take place, and indeed one kind would soon be destroyed.

"Late sowing." Stated not effectual.

"Burning the stubble has been advised. It would be likely to destroy such of the insects as were then lodged, but it would prevent the scattered grains from vegetating, and consequently would cause the remaining flies (and there are a great many lodged elsewhere) to wait for our fall sowing, which might be very destructive.

"I will now proceed to state what I conceive to be a very easy and effectual remedy against both the Hessian fly and insect lodged in the straw. Plough up the stubble as soon after harvest as convenient, and harrow the ground well, which will destroy a great proportion of the insects in the pupa state, and will cause a sufficient number of plants to spring up to receive the deposit of such as may escape the ploughing or evolve from the barn or stacks, and by ploughing again at any time between 1st October and 1st April, the work of destruction will be accomplished; at any rate the number would be so reduced as to become harmless; but the work must be generally gone into, for it must be obvious that a few individuals can do but little to remove an evil, whilst thousands are united to increase it. * * My plan will probably be objected to on account of the prevailing practice of sowing grass seeds among the wheat, yet a due consideration of the subject will, I trust, induce a different practice. I have changed my course of crops, by breaking up the ground for wheat, next corn, and ending with oats and grass, and so far as my experiment has gone I believe it the better plan for all the grains, independent of the fly. If it should not succeed as to grass, it is only necessary to omit sowing grass seeds among the oats, and afterwards prepare the ground specially for grass; or if it is found best to continue the present course by ending with wheat, omit sowing grass seeds until the ground is ploughed for the destruction of the fly, as above advised, causing the last ploughing to be made about 1st of October. * * *

"The insect which causes the early change of color of the ear, &c. does not appear, up to this time, to have been of enough importance to merit farther notice here."

Should these extracts appear to you to throw sufficient light upon the history of the diseases with which we are now troubled, they are at your service for publication, entire or abbreviated, at your discretion.

I am tempted to make some comments, but will only make one remark upon the subject of spring grazing, or pasturing wheat. It would undoubtedly be very beneficial, as to the Hessian fly, if done immediately upon the deposit of the eggs, and by a flock of sheep sufficiently numerous to range over the whole surface and consume the foliage in three or four days. But as to the black fly, it would probably be totally inefficacious, as that is deposited within the stalk close down to the root, and could only be got at by tearing up the whole plant, root and all.

ANON.

December, 1852.

For the Southern Planter.

AGRICULTURAL IMPLEMENTS.

Mr. Editor,—When I subscribed for the Southern Planter, at the Loudoun August court, I promised to give you my experience in using some valuable agricultural implements, for the benefit of my brother farmers. 1st. Pennock's Drill; 2d. M'Cormick's Reaper; 3d. M'Keever's Threshing and Cleaning Machine. I purchased one of Pennock's Drills in 1850; price $100. They have since been improved and simplified in their construction, and now sell for $65. In the last week of September, 1850, and the first week in October, I seeded with the drill two clover fallow fields of 45 acres each—one with White Blue-Stem and the other with Zimmerman wheat, 1½ bushels to the acre, and reaped, the next harvest, 2600 bushels, mill weight, which is near 29 bushels per acre—more by 5 bushels to the acre than I had ever made from the same fields. I had attributed the increased yield partly to the favorable season and the increased fertility of the soil. But subsequent experience with the drill has convinced me that it possesses much advantage over the common broadcast seeding. It saves half a bushel of wheat per acre and deposits the grain regularly in trenches, where it is not so liable to be thrown out by frost. The heads all come to maturity at the same time without any of the undergrowth of small heads, which is caused by the roots being frozen out in winter. One hand and two horses can put in ten acres per day with the drill. I have made several experiments with the drill on corn-

land, which answers well when the land is light and not much grass. We cut the corn-stubble low, and run a harrow before the drill. The Pennock Drill is made in Waterford, Loudoun. There are drills of other kinds that answer a good purpose.

I have been using M'Cormick's Reaper for seven years, and was the first that introduced them in Loudoun. In smooth land and heavy wheat they save much labor and grain. They cut about 5½ or 6 feet. Three horses and two hands cut about one acre per hour. In heavy grain it requires four hands to bind after one reaper. For the last three years I have used two of them, and average twenty-five acres per day through the harvest M'Cormick had one at the World's Fair in London, last year, which took a premium. He is now making them at Chicago, and has made some improvement on them. Hussey and M'Keever both make reapers of another kind, which are highly spoken of by those who have used them.

About thirty years since I purchased the patent right of a spike Threshing and Cleaning Machine for Loudoun county—a one-horse working model: was brought from Maine. At that time there was not a portable horse-power or threshing machine in the county, to my knowledge. Grain was trod out with horses. I was extremely anxious to introduce something to supersede the tedious operation the farmers had to undergo in getting out their grain. I gave Mr. Reuben Hutcheson the right to have one made in Loudoun, and Mr. Lewis Berkeley had one put up in Prince William; both of which proved failures, owing to the want of skill in the workmen. About five or six years after Mr. George Wright, an Englishman, in Middletown, introduced his Six-Horse Power Beater Machine. I was among the first to use them in Loudoun, and the farmers were so well satisfied with them that there was no attempt to improve the threshing machine for many years. Some fifteen or eighteen years past some ingenious mechanic commenced making the Spike Machine, and it has been improved from time to time, until finally Mr. M'Keever of Winchester, has put to it a fan and elevators. It now threshes, cleans and bags the wheat, fit for the mill, at the rate of thirty bushels per hour, and saves the labor of five hands, and no waste of grain in the straw, which is separated from the chaff also. They are made in Winchester by Richards & May, and some other mechanics: price about four hundred dollars, horse-power, carriage, and all complete. I have been using the Wright Beater Machine for twenty-five years, as it puts the straw in better order to feed cattle. I have bought one of M'Keever's threshers and attached it to my Wright horse-power, which I like better than the horse-power they make with them. The Wright horse-power is double geared, and stronger, and requires the horses to walk much slower. I started the machine on Monday, the 8th of the present month, and in seven days we threshed and cleaned about two thousand bushels: price of thresher $225. They can be attached to any horse-power that works with a tumbling shaft, provided it revolves any where between seventy-five and eighty-five revolutions to the horses' one. In my judgment, the machine is superior to any I have ever seen, and it must supersede all others.

I have been thus particular in relating the first introduction and the subsequent improvements on the threshing machine in Loudoun, to show the farmers how much they are indebted to ingenious mechanics, and how much labor has been lost in time past for the want of them.

Respectfully yours, &c.

WILLIAM BENTON.

Spring Hill, Loudoun, Nov. 25, 1852.

For the Southern Planter.

PRAISE OF AGRICULTURE.

CARBONATE OF LIME.

Mr. Editor,—At an early period of my life I read, with very deep interest, the numbers of John Taylor's "Arator," as they first appeared, I think, in the "Richmond Enquirer." The powerful sense of its able author took a strong grasp on my youthful mind, and produced a conviction—not yet erased—of the vast importance of agriculture to the well-being of the community. Not the agriculture deceiving its votaries by a vain attempt to furnish the means of luxurious and extravagant living, without mental and bodily exertion on their part—nor that which man, illiterate and penurious, sordidly delves, as the slave of avarice, for the purpose of hoarding lucre; but that noble agriculture which generously and gratefully cultivates God's earth, with the high aim of qualifying it to sustain the greatest number of human beings, and to become His own garden—to spread plenty and beauty over our beloved country—to afford personal wealth—

> "Not for to hide it in a hedge,
> Nor for a train attendant;
> But for the glorious privilege
> Of being independent."

Such an agriculture is well worthy to be commended, enlightened and patronized by all who are themselves enlightened and patriotic—especially by the reverend clergy—for agriculture is not only "a nursing mother" to the State, but it pours out noble food for every feeling and principle of a generous cast—patriotic, moral and religious. Glorious would be the result could the poor sinking Old Dominion wisely look to such an agriculture to save her from her threatened destiny. The prime of my life has been devoted to a laborious practice of medicine in the country. A

conviction of the importance of agriculture, however, held possession of my mind through all my labors, and I felt strong faith that new lights would be shed on the subject, and that new guides would arise to unravel many dark mysteries, and unveil much valuable truth. In the midst of these sanguine reveries I met with "The Essay on Calcareous Manures"—bought and read it before I left the bookstore. The appearance of this book formed an era in the agriculture of Virginia, the full development of which can, as yet, by no means be estimated. A correspondence which I obtruded on its author, led me, with many misgivings, to commence writing articles for "The Farmers' Register." The discontinuance of that work dashed many hopes which I had enthusiastically indulged and which would again be greatly revived by "The Southern Planter," under your auspices, did I not know how hard it is for any thing besides politics to take firm and lasting hold on the Virginia mind. Is this because politics with the mind, as alcohol with the body, produces, artificially, a pleasurable stimulation, allowing nature to relax in her labors until she is ready to refuse work altogether, unless aided by this artificial help? If so, perhaps it would be wise to resort more generally to the *caucus*, which seems to be a sort of political gin, producing such delightful intoxication on our citizens. *Hole and corner clubs*, properly conducted, might possibly counteract the power of political caucuses, and at the same time excite some agricultural fervor in our Commonwealth.

"The Planter" can do but little of the good desired, unless many of those anxious in the cause of agriculture and capable of writing, will consent to aid you in filling its pages. It ought not to be expected of one man to perform such labor. I once thought that should I ever enjoy the leisure of age I would attempt much in this way. But with the leisure have come the infirmities of age, which disqualify as much for the practical researches and exertions of agriculture as for the practice of medicine. I feel now the same misgivings as regards ability to write that I ever did, and only attempt it because so few seem disposed to aid you.

My special motive for addressing you at this time is to call attention to a subject into which, for several years, I have been anxiously inquiring. I had been in the habit of supposing that carbonate of lime, in large quantities—natural or applied—was absolutely indispensable to the productiveness of any soil and that lands devoid of it might, by its application, be rendered permanently fertile, unless they contained matters poisonous to vegetation which lime could not neutralize. This is doubtless true as regards the tide-water region. I have, however, for the last fifteen years been hearing occasionally of gentlemen, in this our middle region, who have, with great care and some expense, applied oyster-shell lime without being able to detect the slightest change in the character of the land. Two of these experiments have been tried in the last five years within four miles of my house. One of them—made by a particular friend, whom I often visit,—I have anxiously watched, and neither I nor the experimenter have been able to perceive the slightest benefit wrought on the land. I am not certain that I remember correctly, but I think there were about 2000 bushels of lime applied, at the rate of thirty bushels to the acre. That land and the adjoining have been well dosed, both with purchased and home-made manures. Being treated alike, except as to the application of lime on part, not the slightest difference can be perceived.

I and many others—bound by ties to this region which we cannot think of severing—have been living in hopes that the time would soon come when, through some of the new modes of internal improvement, we might procure lime on remunerative terms. If these experiments are to be relied on, these hopes—even if gratified—would all be vain. But may we not believe that He who denied lime to our region has provided that it should not be needed? I do not know that it has been proven that carbonate of lime, as such, is taken up by vegetation. From all the experiments made among *us* the highest benefit is afforded by phosphate of lime. It is possible that below tide-water, and in other regions where lime produces such striking effects, that phosphoric or some other acid may exist in the soil, ready to do good as soon as it comes in contact with lime. If such acid be absent from our soil, we have only to apply it, combined with lime enough to neutralize it, and we, possibly, gain all the benefits which could accrue from lime, whatever additional quantity of simple carbonate might be applied. A gentleman, in my immediate neighborhood, purchased, last spring, thirty-seven tons of Mexican guano, containing 57 per cent. of phosphate of lime. Of this he retained fifteen tons, and disposed of twenty-two among his friends. Some of this was sown on very poor land, in corn, in full view of my house, and the crop, I judge, must have been at least twenty bushels to the acre. I cannot believe *that* land, with so much dry weather, could, unassisted, have brought corn at all, for a great portion of it was a naked red gall. Here was an instance of one combination of lime producing surprising effects. I know that without a rigid analysis of any soil it is impossible to give a rational explanation of the result of any application made to it. But when we know that carbonate of lime wonderfully meliorates soil below tide-water, and renders no perceivable benefit to soils in this region, we may fairly infer that there is an inherent difference in the two kinds of soil. Moreover, there must be some ingredient in the tide-water lands—denied to ours—which produces benefit, by combination with carbonate of lime.

But one instance of rigid analysis of a soil,

in this region, has come to my knowledge. That was made by Dr. D. Stewart of Baltimore, for my neighbor and friend, Thomas E. Perkinson, Esq.—the gentleman alluded to above. I regret that my copy of this has been mislaid, and the original has been loaned to a gentleman some twenty miles off. I distinctly recollect, however, that the high land—red Appomattox hills, composed of stiff clay, intermingled with smooth river quartz pebble and much coarse sand, very different from the ordinary lands of the neighborhood—contained not more than one-tenth of one per cent. of lime, and so little phosphoric acid, that Dr. Stewart recommended the use of Mexican guano as the cheapest mode of supplying the deficiency. There was, likewise, in this analysis but very little potash, which—from the underlying felspar and its intermingled detritus—I should judge, is much more abundant in the neighboring grey lands. Should the free use of this guano—in many instances mixed with Peruvian—greatly increase the capacity of our lands for the production of grain and clover, and especially, should analysis of soils—with a view of adapting manures to their particular wants—become common, we may, possibly, look less despondingly on the negation of lime to our region. Whether land, destitute, or nearly so, of calcareous matter, can have its privation compensated by the application of some of the compounds of lime—less bulky and weighty, and, of course, less expensive in transportation—is a question which we, in this section, ought to have settled. To draw attention to this subject has been my motive in writing this article.

Most respectfully,

W. S. Morton.

Cumberland County, November, 1852.

For the Southern Planter.

FRENCH MERINO SHEEP.

Mr. Editor,—Yours of the 22d November is received, requesting me to send you cuts of my French sheep for insertion in the Southern Planter. This I would gladly do had I good cuts on hand. The cuts that have been published of my French sheep do not do them justice; I am only waiting for the wool to get out a proper length, when I shall have some new cuts, and will cheerfully forward them for insertion in the Planter. There is probably no branch of American industry that has been so much neglected or managed with so little skill as that of wool-growing. While our mechanics and manufacturers have been steadily progressing in the improvement of machinery that is employed in converting the products of the sheep into beautiful styles of cloth, our wool-growers have been blindfolded with negligence, and have in many instances suffered those noble specimens of Spanish Merinos introduced into this country by Hon. William Jarvis and others, to so far degenerate as to become almost worthless. But at the present time there seems to be a change coming over our farmers in relation to this important branch of agriculture.

The attention of the public has, in a measure, been called to the subject. A goodly number of our citizens begin to learn that it is to their advantage to keep sheep that will shear a fleece of from 5 to 8 lbs. of fine clean wool, instead of those that will not produce more than 2½ lbs. and even this is higher than the sheep will average throughout the country.

I see by the census of 1850, taking the whole of the United States, the average fleece per sheep is only about 2 lbs. and 6 oz.

Experience has taught us that this is not half what it should and might easily be of clean, fine wool. Of late some have pretended to shear from the French sheep fleeces that weigh from 30 to 40 lbs. but it would not be reasonable to suppose this to be all wool.

Although I have at the present time more money invested in the French sheep (which I purchased from the flocks of Leroux Cugnot and Victor Gilbert) than all other breeds, I am not disposed (by some sleight of hand) to make my fleeces weigh 40 nor even 30 lbs. apiece; but think I would be justified in saying that flocks of the above breed, well kept, will shear an average of from 6 to 10 lbs. of well washed wool.

Of my other breeds of sheep I will speak in a future communication. I would only add that our Silesians are heavy shearers, and that I have lately sold the wool at 60 cents per lb. My old Spanish flock also produce well. The present season sheared an average of 5½ lbs. of well washed wool which I have sold at 52½ cents per lb. My partner, Wm. Chamberlain of Red Hook, Duchess county, New York, has just received thirty Merino sheep from Spain. Of the quality of them I cannot judge, as I have not yet seen them.

George Campbell.

West Westminster, Vt. Dec. 4, 1852.

For the Southern Planter.

PREMIUM WHEAT.

Mr. Editor,—In the last number of your valuable journal I observe several accounts of the large yield of *premium* lots of wheat in the State of New York; and also the product of a field cultivated by Mr. John Marshall of Fauquier county in this State. This induces me to send you a statement of the product of a small lot of wheat in this county, cultivated by Mr. James R. Garrison. Mr. G. is not in the habit of seeding wheat, and did not contemplate seeding any in the fall of 1851, but having received from a friend in Baltimore a present of a bushel of wheat which was re-

presented to be of very fine quality, he sowed it broadcast, late in October, on part of a lot of ground which had been planted for four successive years in sweet potatoes. He intended to sow the bushel of wheat on one acre of ground, but a subsequent accurate measurement showed that the lot contained one acre and one-eleventh of an acre. The product, when carefully cleaned ready for market, was found to be sixty and one-fourth (60¼) bushels on the whole lot, which is equal to fifty-five bushels to the acre.

The lot was not gleaned, and Mr. Garrison is of the opinion that he could have obtained two bushels more by carefully gleaning it. The lot had been manured three out of the four years in which it had been planted in potatoes with farm-yard manure; but it received no additional manuring as a preparation for the wheat crop, nor did it receive any manure after the wheat was sown, nor was any particular pains taken in seeding the wheat or preparing the ground.

Although Mr. Garrison's crop was considerably less per acre than Mr. Hotchkiss', yet it greatly exceeded the crops on the other two premium lots, and still more, exceeded Mr. Marshall's crop; and the product of Mr. G's crop is the more remarkable when the circumstances attending the seeding of the crop are taken into consideration. On the score of net profit per acre Mr. G.'s crop exceeded Mr. Hotchkiss'. I am aware that it is generally believed that the land in this county is not suited to the production of good crops of wheat, but I know that this opinion is unfounded when proper pains are taken in manuring the land and seeding the crop. I have never before known a crop so great per acre as Mr. Garrison's raised in this county, but I have several times heard of thirty bushels per acre being produced on small lots; and in two instances I have heard of as much as forty bushels per acre.

I did not see Mr. Garrison's wheat while growing, nor did I see the wheat measured after it was prepared for market, but I received this account from Mr. G. himself, and he is a highly respectable gentleman, in whose veracity the most implicit confidence may be placed.

Very respectfully yours, &c.

THOMAS R. JOYNES, SR.

Accomac, Nov. 24, 1852.

France, with a population of 32,460,935, has 10,896.682 landed proprietors, or one in three. The United States, with a population of 20,000,000, have 5,000,000 proprietors, or one in four. Belgium, with a population of 15,022.677, has 950,623 proprietors, or one in five. Holland, a commercial and shipping country, with a population of 3,500,000, has 490,000 proprietors, or one in nine. Sweden, with a population of 3,874,203, has 30,000 proprietors, or one in twelve. Great Britain and Ireland, with a population of 27,041,050, have only 633,421, or one in forty out of the population, including freeholders, with a direct interest in the soil.—*City Fact.*

From the Ohio Farmer.

LIVE STOCK IN THE UNITED STATES.

STATISTICS.

From a table of statistics, compiled from the seventh census, taken in June, 1850, we gather the following facts as to the live stock of the United States. It will be remembered that allowance must be made for the increase of two years. We copy from the "Journal of the United States Agricultural Society," edited and published by Dr. Lee.

The statistics place valuable facts before the reader, to which we invite particular attention.

HORSES.—If it should be necessary to place every farmer in the Union on horseback, there are 4,325,652 horses in the country, for their service. Ohio has the honor of rearing and keeping more horses than any other State; the whole number reported being about 463,397. New York had 447,014; Pennsylvania, 330,398; and Kentucky, 315,581.

The improvement of four and a half million horses, worth at least $200,000,000, is an object worthy of more attention than it has hitherto received. State and County Agricultural Societies have done something, and the high price of good animals more, to encourage the breeding and rearing of superior roadsters, and good horses of all work. But the years of service rendered by a majority of them are fewer than they ought to be in this country. To prolong their lives and increase their value, their natural wants, constitution and diseases must be more studied and better understood by those that own and use them. We ought to excel all other nations in the number of fine horses, for we possess unequalled advantages for producing them to any desirable extent.

ASSES AND MULES.—Of these useful animals the census gives only 559,070 in all the States and Territories. New Mexico had 8,654, and only 5,079 horses; Tennessee is the largest producer of mules,

reporting 75,303; Kentucky had 65,609; Alabama, 59,895; and Georgia, 57,379.

The growing of mules is profitable, and the business has been considerably extended within the last two years.

Milch Cows.—The number of cows exceeds the estimates that we have had occasion to make of this kind of farm stock, in all the States, except New York, where the returns are below what we expected from the number given by the State census of 1845. The whole number of cows in the United States two years ago was 6,991,946. Of these, New York had 931,324; Ohio, 544,499; Pennsylvania, 530,224; and Georgia, 334,223.

Cows differ more in value for milking purposes than is generally supposed.—Thousands fail to pay their way, and are a positive tax on their owners; while a first rate milker yields a large profit on the food consumed. How to banish all indifferent and worthless kinds, and fill their places with superior animals is a question for the intelligent growers of neat stock to consider. Deterioration is practised by a hundred farmers where improvement is duly studied by one. As a general thing, cows and their offspring must be better kept before any decided change for the better is attainable. High quality in ancestral blood avails nothing in the veins of a starved calf. Without good keeping, the best breeds of stock are utterly worthless.

Working Oxen and other Cattle.—We are not informed to what age young steers must attain before they are entitled to rank as "working oxen," or whether, in case they have never been subjected to the yoke, they are excluded, no matter what their years, from the catalogue of "working cattle." We suspect that entire uniformity in separating "working oxen" and "other cattle," has not been observed in all the States. Be that as it may, the latter number 10,265,180; while the former are set down at 1,698,261. By adding together the milch cows, working oxen, and other cattle, it will be seen that the aggregate of neat stock was 18,355,387 head. New York contains nearly three times as many oxen as Ohio or Pennsylvania. New York has 178,909; Ohio, 65,381; Pennsylvania, 61,527; Missouri, 111,268; which places the latter next to New York in this kind of stock.

Sheep.—Many will be disappointed to find that all the sheep in the United States numbered only 21,621,482, at the last census. This is a small increase on the returns of 1840, and a state of things that does not promise a rapid advancement in the production of wool for many years to come. Much has been written on this branch of husbandry, and in favor of producing at least wool enough for home consumption; but somehow it happens that we import annually many million pounds, and cut the throats of thousands of young sheep for their pelts and tallow, instead of keeping them to increase our flocks.

It is believed that stock companies might be formed, having from $50,000 to $200,000 capital each to carry on the business of breeding sheep and growing wool, where lands are cheap, as in some parts of Virginia, Tennessee and Texas, and realize a reasonable profit. Economy, capital and skill, brought together in sheep husbandry, could hardly fail of success. There is just now unusual activity in the business of importing French and Spanish sheep into this country, many of which unite great weight of carcass and of fleece, with a fair degree of fineness and evenness of the fibre; and it is to be hoped that wool growing will soon be as flourishing as any other department of industry. Ohio and New York keep more sheep than any other States.

Swine.—It is pretty evident that many American farmers think more of hogs than of sheep, for their hogs outnumber their sheep by nearly ten millions. This is a singular fact, and in the judgment of many, indicates a badly cultivated taste which so greatly prefers the flesh of swine to that of sheep, to say nothing of the superiority of wool to hair. Over thirty million hogs (30,315,719) are a sufficient stock to render pork and bacon-making, as it really is, a very important branch of American husbandry. Tennessee takes the lead in this department—keeping nearly four times more swine than sheep. Of the latter, the census gives her only 811,591; but of hogs, she claims 3,114,111. Kentucky has 2,861,163. Indiana is ahead of Ohio in the pig line, having 2,298,776; while Ohio is content with 1,964,770.

Value of Live Stock.—The value of live stock in the United States is returned at $543,822,711. Of this large sum, New York claims $73,570,499; Ohio, $44,124,741; and Pennsylvania, $41,500,053. If we add the value of live stock, farm implements and machinery to that of farms, the whole investment is found to be $3,962,353,395. If to this be added the

usual increase of two years, and the estimated value of the slaves engaged in agriculture, the whole amount to five billions, or five thousand millions of dollars.

WHEAT, RYE AND INDIAN CORN IN OHIO AND UNITED STATES.—We also learn from the above statistics, that in 1850, there were in Ohio 9,851,493 acres of improved land, 14,487,351 bushels of wheat, 425,718 of rye, and 59,078,695 of corn.

In the United States 118.435,178 acres of improved land, 100,479,150 bushels of wheat, 14,188,457 bushels of rye, and 592,141,230 bushels of Indian corn.

DEVON CATTLE.

The following article, from the pen of an esteemed friend, Dr. GEORGE M. BATTEY, of River Bank Farm, near Rome, Georgia, expresses so nearly our own opinion of the Devon cattle, and their adaptation to the South, that we take great pleasure in giving it a place in the columns of the Cultivator. We are pleased to observe that the enterprising farmers of the Cherokee Country are turning their attention to the raising of fine stock, and we feel well assured that no breed of neat cattle will so well repay them for care and attention as the beautiful, docile and hardy Devons.—*Southern Cultivator.*

"The great secret success in breeding cattle depends mainly upon the adaptation of the *size* of the breed to the soil and climate.

Any large, heavy breed of animals put upon light pasturage in a warm climate is compelled to deteriorate in value, and degenerate in their most valuable properties. The Devon is the only breed of cattle (available in a warm climate,) that combines a heavy muscular frame, short legs, and a remarkable aptitude for fattening—with great activity, and an increased power of locomotion, which enables them to gather from our sparse pastures, a sufficiency of food to keep them in an improving condition.

Most, if not all the improved breeds of cattle which are enjoying high repute among agriculturists, originated, or were bred up to their present high standard, in the British Isles. The North Devons can be traced back, in their purity, farther than any other breed. Satisfactory records are found, showing that this breed of cattle existed, in its native country, more than two hundred years ago, and has been brought down without any cross with other breeds, and without alteration in its general appearance and properties, to the present day.

A spirit of careful improvement has perfected the form of the Devons, and has rendered them remarkably hardy, and free from disease, to a much greater extent than any other breed of cattle; (a fact so generally conceded, that Stock Insurance Companies insure the lives of Devons at their minimum rates.) Their milking properties have been improved in the hands of a *few* breeders, till their herds rank deservedly first for dairy purposes, even in England, and upon *heavy pastures*, in the Northern United States. But with all this improvement, the Devons retain the same beautiful color, fine soft hair, beauty of form, activity, etc. which characterized them two hundred years ago, indicating a remarkable purity in blood, when first taken up by the improving breeder.

The Devons are, upon first sight, considered a *small* breed of cattle, but, upon examination, it is proven that they are of *medium* size, exceedingly heavy, and that their apparent smallness is owing to their short legs and the beautiful compactness of their forms. They are of a deep, but bright red color, which is peculiar to themselves, with bright orange colored skins, clean yellow nose, without a dark spot or shade upon it, their hair soft and silky, often curly or wavy. Their horns are slender, of a medium length, pointing a little forwards and outwards, with a graceful curve upwards. They are heavy and compact, but still with a great length of body, compared with their height. Their girth around the chest is surprising; their ribs springing out behind the shoulders in that rounded or hooped form, which is so much admired by breeders, and so essential to the health and thrift of the animal.

The Devons are remarkably adapted to the light pastures of the South; first, by the great size of their *lungs;* second, by their proportionately large brain; third, by their great activity; and fourth, by the comparatively small size of their stomach and offal. The Devons are, to a certain degree, an exception to the general rule, that the fattening properties of an animal, under the most favorable treatment, are in direct ratio with the smallness of its lungs. We find that even with their large lungs, they excel most other breeds in the rapidity with which they fatten, when stabled and well fed, and upon a rougher mode of

treatment, such as cattle receive at the South, the capacity of their lungs tells with the most marked advantage. When an animal is exercising, the rapidity with which the blood circulates is greatly increased, requiring a large surface of lungs to properly arterialize the blood, which becomes a matter of vital importance in the expanded state of a Southern summer atmosphere. When an animal can be kept quiet and not fatigued, nor excited, a large capacity of the lungs is not needed, and indeed it is a rule, that as it fattens and the lungs become *compressed*, the rapidity with which it takes on flesh is greatly increased; but if it should be called upon to take any considerable exercise, or should become overheated, while in that state, the necessity for an increased capacity and power in the lungs would be readily perceived. The animal will appear sick, and as the most *favorable termination*, the impurity of the blood (caused by want of proper arterialization) will show itself upon different parts of the body in eruptions. The truth of these remarks may be seen by the comparative shape and powers of endurance of different horses. We find that those with short bodies and a limited capacity of lungs, when kept quiet or worked slowly, are readily kept very fat, but if called upon to exert their utmost strength or activity, they readily become fatigued, their lungs become oppressed, and if not relieved by rest their health becomes immediately affected; while a horse with larger lungs will not be so readily kept very fat, but will endure a greater degree of fatigue, without becoming at all affected.

Now, upon the treatment which our herds are subjected to at the South, we readily perceive the necessity for a combination of points in an animal which will fit it to undergo a much greater amount of fatigue (and that under the enervating influence of a sultry climate,) than the same animal would be called upon to suffer in the more luxuriant pastures of the North.

With our sparse pasturage, every animal must undergo considerable fatigue each time that it fills its stomach with food, which becomes a serious drawback to their prosperity when undergone beneath the rays of a burning sun. Such circumstances tell to the disadvantage of the Durhams and other breeds of cattle, which have been heretofore tried at the South, rendering them diseased or unthrifty, and disappointing the hopes of those who have tried to acclimate them. By substituting the Devons, we will readily avoid such disappointments in future, and easily increase the quantity, as well as quality, of milk, beef, and butter, at a less cost; and, at the same time, have a stock of cattle remarkable for beauty and immunity from disease.

The comparatively large size of the *brain* in the Devons, is of great advantage in enabling them to withstand fatigue, and the enervating influence which a warm climate necessarily exerts upon the animal economy. Thus fitting them for the yoke and preserving their health under the combined disadvantages which all herds suffer in this country.

The reason why man can undergo more protracted fatigue, and greater privation without injury, than any of the lower order of animals, is owing mainly to the greater amount of nervous influence which is attended upon a larger brain.

Their activity and the smallness of their stomachs and offal are advantages possessed by the Devons over any other known breed of cattle, adapting them particularly to *our* use. All *ruminating* animals must of necessity *fill* their stomachs before digestion can properly commence—a small amount of concentrated nutriment will sustain an ox in health, if he has sufficient coarse food (no matter how poor,) to fill his stomach, and thus enable him to requegitate his food. Now with the increased size of the paunch in the Durhams, comes their want of activity. With the actual necessity, for the *larger* amount of food, (to be gathered from a meagre and widely scattered supply,) comes an increased disability for procuring it. With the Devon the exact converse is true. With their ability to thrive upon a *small supply*, comes a highly increased power of locomotion, enabling them to procure a sufficient supply in a shorter time, without fatigue, thus allowing them much more time to be at rest while digesting their food. In the quality of milk, butter and beef, the Devons rank first. Their flesh presents that beautifully marbled appearance (caused by a regular distribution of fat,) which is so much admired, and which is not attainable in a high degree in any of the mixed or native cattle common to our country. As milkers, the Devons must certainly rank first, for the Southern States at least.—They *will* and *do* give much richer milk than any other breed which can be made

available here, and, moreover, they give a large quantity, and will come into use at an age, at least *one-third younger*, than our common cattle, giving milk at two years old, and being ready for work or the butcher two years before common or native cattle, with the same care."

THE SOUTHERN PLANTER.

RICHMOND, JANUARY, 1853.

TERMS.

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A HAPPY NEW YEAR.

In wishing a happy new year to all our subscribers, we cannot refrain from doing so more particularly to those of our patrons who have aided us by their pens, and equally so to those who have helped us to obtain subscribers. We ask of both a continuance of favors, which we can only promise them to do our best to merit. The subscription list of the Planter is creeping up, and we hope some day or other to arrive at the goal, which, on setting out, we flattered ourselves we should reach in two years. But we shall need the aid of our friends more than ever, and we trust they will give it to us with no grudging hand.

THE STATE AGRICULTURAL SOCIETY.

Below will be found the proceedings of the State Agricultural Society, which held its annual meeting in Richmond on the 16th and 17th of December. We think the Society is looking up. There was much interest manifested in its proceedings; and though the attendance was thin, (partly due, we hope, to the inclemency of the weather,) the zeal was considerable. Two addresses were delivered, one by Edmund Ruffin, Esq. of Hanover, on the evening of the 16th; and one on the next evening by the Editor of this paper.

The balance of each evening was spent in an interesting discussion on various crops, and on different points of farm management, and the meeting on each occasion continued in active and animated session until eleven o'clock. We are sorry that we were unable to procure the services of a reporter to present the discussion to our readers. At the next meeting we shall endeavor to do so. We regard it as one of the most valuable features of the Society that it affords to farmers an opportunity of meeting and comparing opinions, and doing it in a manner that is not at all calculated to embarrass them.

It will be seen that our esteemed President, Edmund Ruffin, Esq. has resigned his office under the pressure of ill health and advancing age; but he still retains a place in the Executive Committee, and gave the Society every assurance that he felt as lively an interest in its welfare as ever, and would take as active a part in its advancement as his infirmities would permit.

His successor is Philip St. George Cocke, Esq. of Powhatan. So far as we know, and we think we know pretty far, he is the very best choice that could have been made in the State of Virginia. To those unacquainted with him, let us say that he is a man of wealth, munificence, public spirit, energy and system, entirely devoted to Virginia and her institutions, and thoroughly imbued with the spirit of rural improvement. If at all sustained by the community, he will succeed in getting up, and *keeping* up, (for this latter is generally the difficulty in Virginia,) a good Society.

Whether the Legislature will give us aid remains to be seen. We hope they will. We cannot imagine that, if the question is fairly

presented, they can fail to see the necessity of a liberal endowment, and we are sure that there are several gentlemen in the Legislature who have the ability to present it fairly and urge it strongly. As the supposition more complimentary to their sense, patriotism and public spirit, we shall presume that they will aid us until we know to the contrary.

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VIRGINIA STATE AGRICULTURAL SOCIETY.

At a meeting of the Virginia State Agricultural Society, held at the Capitol on Thursday evening, the 16th of December, 1852, the President called the meeting to order and delivered an address to the Society upon the effects of domestic slavery on the social manners, habits and welfare of the agricultural population of the Southern States, and in comparison with the slavery of class to class existing in the Northern States.

The report of the Executive Committee was then read, as follows:

The Executive Committee of the Virginia State Agricultural Society submits the following report of its labors during the past official year of service:

Circular letters were addressed soon after the organization of the State Agricultural Society to two or more individuals in each county of Virginia, requesting them to solicit and obtain members for the Society.

Other circular letters, with various queries annexed, were also addressed particularly to some of the best farmers in every county, as well as generally, requesting answers, or any other information upon agricultural subjects.

A petition to the Legislature of Virginia (before ordered particularly by the Society) was presented, asking for pecuniary aid and facilities to the designed operations of the Society. Another petition for the putting down the existing useless inspections of guano and gypsum, which had been ordered by the unanimous vote of the Convention which resolved itself into this Society, was also presented.

A scheme of premiums for improvements or other most meritorious services to agriculture, was prepared and approved for future adoption and offering to the public. But for the present, this scheme remains suspended, because of the deficiency of sufficient funds of the Society to provide the premiums.

A Constitution for the Society was prepared and approved by the Executive Committee, and of which the main features are in strict obedience to the prior resolutions and instructions of the Society. This paper will now be submitted to the consideration of this meeting. But a portion thereof, which is dependent for its execution on legislation, then expected, and which has not occurred, must remain suspended, or inoperative for the present time at least.

Copies of the several papers above referred to are appended to this report, as well as of such agricultural communications as have been received from individuals.

The Executive Committee deemed it best for the objects of the Society, and therefore so acted, that the completed proceedings of the Committee, and also all approved communications upon agriculture, should be published without delay. This has been done in the Southern Planter and also in a separate publication of the Transactions, and so far, without expense to the Society. The publisher, Mr. P. D. Bernard, has commenced the regular publication of the papers of the Society by arrangement with and under direction of the Executive Committee, but at his own charge and risk; and has offered the same for sale to the public at a very low price. It is hoped that he will not be permitted to be a loser by this effort to promote agricultural interests and the objects of this Society.

The members, at this date, amount in number to 339. The funds in the Treasurer's hands amount to $268—many subscribing members not having paid the amount of subscription for membership.

In pursuance of a requisition of the Constitution Messrs. E. Ruffin and Frank: G. Ruffin have been respectively invited to deliver addresses to the Society during the progress of this meeting.

E. RUFFIN, *Chairman Ex. Com.*

The Constitution, above reported, was then taken up and considered, and, after a slight amendment, was adopted, and is as follows:

CONSTITUTION OF THE VIRGINIA STATE AGRICULTURAL SOCIETY.

1. The name of this Society shall be the Virginia State Agricultural Society.

Its objects shall be to improve and advance the condition of agriculture, horticulture and the auxiliary mechanic arts.

2. The Society shall consist of such per-

sons as shall signify their wish to become members and pay to the Treasurer of the Society, or other person duly authorized to receive the same, an initiation fee of two dollars, and one dollar annually thereafter. And also of such honorary and corresponding members as shall be deemed proper by the Society: but no person shall be chosen an honorary member of the Society upon any other grounds of merit or claim than of distinguished services rendered to agriculture.

The payment of twenty dollars at one time shall constitute a member for life, and shall exempt the donor from annual contributions.

3. The officers of the Society shall consist of a President, six Vice Presidents, Recording Secretary, Corresponding Secretary, Treasurer and an Executive Committee, to consist of the above named officers and five other members, not more than two of whom shall be appointed in any one county, town or city of the State.

All the officers shall be elected by ballot annually.

4. The Recording Secretary shall keep the minutes of the Society. The Corresponding Secretary shall carry on correspondence with other Societies and with individuals in furtherance of the objects of the Society. The Treasurer shall keep the funds of the Society and disburse them on the order of the President, countersigned by the Recording Secretary, and shall make a report of the receipts and disbursements at the annual meeting of the Society.

5. There shall be an annual meeting of the Society at such time and place as shall be appointed by the Executive Committee, at which time all the officers shall be elected, who shall retain their places until their successors shall have been appointed.

6. In the computation of time, in reference to the Society, each year shall commence on the 1st day of February and end on the 31st day of January following. No person shall join the Society for a shorter time than twelve months. The membership of all persons joining the Society after the 1st of February shall have relation back, and shall be esteemed and respected members as of that day. Any member may withdraw from the Society at the end of the year by making known his intention to withdraw to the Recording Secretary and obtaining from him a discharge.

7. The Executive Committee shall hold stated meetings, to be convened by the President, to carry into effect, by particular regulation, the general resolutions or instructions of the Society, any three of whom shall constitute a quorum to transact business; may fill all vacancies in their body (occurring by death or otherwise) until the next general meeting of the Society—and in general shall have power to adopt any measures of detail to carry into practical operation the general objects and resolutions of the Society. The Executive Committee shall take charge of and distribute or preserve all seeds, plants, books, models, &c. which may be transmitted to the Society, and shall also have charge of all communications designed or calculated for publication, and as far as they may deem expedient, shall collect, arrange and publish the same in such manner and form as they shall deem best calculated to promote the objects of the Society.

8. The Society shall appoint an Agricultural Commissioner and Chemist, if their means shall justify the outlay; and a person or persons of suitable qualifications can be obtained, whose duties, terms of office and compensation shall be regulated by them.

9. It shall be the duty of the Executive Committee to invite one or more persons, eminent for knowledge of practical agriculture or of science directly auxiliary to agriculture, to address the Society in general meeting, and generally to invite gentlemen to furnish communications on such subjects, of practical and scientific agriculture as they may deem important, all of which shall become part of the archives of the Society.

10. The Society shall hold an annual exhibition, cattle show and fair, at such time and place as shall be designated by the Executive Committee.

11. The premiums that shall be awarded by the Society shall be in all cases such as are likely to benefit agriculture, horticulture or the auxiliary mechanic arts.

12. This Constitution may be amended by the vote of two-thirds of the members attending any annual meeting.

On motion,

Resolved, That the Recording Secretary be instructed to invite the members of the General Assembly to attend an adjourned meeting of the Society in this place tomorrow night.

Members present were called on by the President to communicate to the Society facts of a practical nature on various sub-

jects connected with agriculture, when interesting and instructive remarks were made by Messrs. Ruffin, Jr., Ruffin, Sr., C. C. Lee, Booth, Gilmer, Bondurant, Nelson, Harvie and Noland, on the exhausting or non-exhausting tendency of the oat crop, on wheat fallow, and especially for and against the system of re-fallowing for that crop, and upon the natural history, character and habits of, and remedy for, the joint worm.

On motion,

Resolved, That the President be requested to furnish a copy of his address, delivered this evening, for publication, under the direction of the Executive Committee.

The Society then adjourned to meet at the same place to-morrow afternoon, at 4 o'clock.

—

Friday Afternoon, 4 o'clock.

The Society convened agreeably to adjournment.

The President announced the first business in order to be the election of officers.

It being understood that the President had determined not to accept a renewed appointment to that office, it was, on motion,

Resolved unanimously, That we acquiesce with painful reluctance in the decision of Edmund Ruffin, Esq. to decline a re-election to the office of President of the Society, and that we deeply regret the circumstances of declining health and increasing infirmities which have constrained him to this determination.

Resolved unanimously, That the thanks of the Society be, and they are hereby tendered to Mr. Ruffin for the ability and efficiency with which he has heretofore discharged the duties of President, and also *for his life-long zeal in the cause of agriculture.*

The following officers were then unanimously elected by ballot:

President—Philip St. George Cocke.

Vice Presidents—Edmund Ruffin, Willoughby Newton, Lewis E. Harvie, S. T. Stuart, Thomas L. Preston, Gen. S. H. Lewis.

Executive Committee—Wm. Boulware, E. G. Booth, W. G. Overton, William H. Richardson, Richard Irby.

Recording Secretary—C. B. Williams.

Corresponding Secretary—Frank: G. Ruffin.

Treasurer—Bernard Peyton.

Resolved, That when the Society adjourns finally it adjourn to meet again at the call of the Executive Committee.

Adjourned to meet in the evening at half past 7 o'clock.

—

Friday Evening, 7½ o'clock.

The Society convened agreeably to adjournment.

Mr. Frank: G. Ruffin, by invitation of the Executive Committee, delivered the annual address, when, on motion, it was

Resolved, That the thanks of the Society be presented to Frank: G. Ruffin, Esq. for the able, appropriate and highly instructive address delivered this evening.

Resolved, That the Corresponding Secretary be requested to procure a list of all societies, clubs or associations, connected with agriculture in Virginia, and report them to the Executive Committee.

Resolved, That the Executive Committee request societies and clubs in correspondence with the Society, and also individual members, to institute experiments on important subjects in practical agriculture, and report results to them for publication.

Messrs. Old, Gilmer, Overton, E. Ruffin, Sr., Ruffin of Prince George, Tomlin and Nelson made interesting statements on various agricultural topics, especially on the management of the corn crop, the wheat crop, &c. and Mr. Johnson Barbour on the character and habits of the joint worm, and Peruvian guano as a remedy therefor.

The Society then adjourned at a late hour to meet again at the call of the Executive Committee.

E. Ruffin, *President.*
Ch. B. Williams, *Rec. Sec'y.*

ACKNOWLEDGMENTS.

We have received from the Corresponding Secretary of the New York State Agricultural Society, B. P. Johnson, Esq. the volume of the Transactions of the New York State Agricultural Society for the year 1851. Having only got them lately we have had no opportunity to look into them. But we take it for granted that they are as valuable, we should rather say invaluable, as the previous volumes from the same source. We are much obliged to the worthy Secretary for the present.

We have also received the concluding two

volumes of the series published by Mr. DeBow and advertised in this paper. The whole consists of a republication, occasionally in condensed form, of the best articles that had appeared in the Review up to a tolerably late period. We have looked but slightly into it, yet sufficiently to assure us of the great value of the work; and we do (what, as is known, we never do without good cause,) recommend it to our readers. The statiscal information is of great value, and for the most part unattainable elsewhere, and no where accessible in so convenient and attractive a form. But independent of those and of several other matters of particular interest, we do not hesitate to say that the articles on slavery alone are worth many times the money that is paid for the book. In particular the able letters of Ex-Governor James H. Hammond of South Carolina, to Mr. Clarkson, commend themselves to our attention by their rare strength of argument, breadth of view and powerful style.

We have also received from Mr. J. W. Randolph the promised copy of the "Essay on Calcareous Manures," by Mr. Ruffin. That valuable book is now published and ready for delivery. We hope to have it reviewed in a manner suitable to its merits in our February number. Mr. Randolph has bought the copy right, and the book is stereotyped. It remains to be seen how he will be remunerated for this enterprise, and whether a Virginia book, by a Virginia author, on a Virginia subject, got up by a Virginia publisher, will be permitted to lie neglected on shelves which have been swept of Mrs. Beecher Stowe's romance by the demands of Virginia readers.

SEWING MACHINES.

We are very much obliged to the reverend gentleman who has sent us, at our request, the following letter on the sewing machine. Since his communication was sent to the printer we have seen, and append herewith, an article on another machine of the same sort, costing only twenty-five dollars.

We regard either invention as one of the most important of the age. Whether sewing be looked upon as the necessary labor of too many of our women, or, as in many instances it really is, "that pretty excuse for a woman's idleness," we consider it an evil, as all sedentary occupations must be; and knowing as we do full well the toil to which it subjects so many southern matrons we hail its substitutes as a God-send. Our ladies in the country hold a very responsible station, and one of considerable labor and anxiety. We do not regret that. Labor and anxiety belong to all classes and are a blessing. And the superintendence of a country household seems to be the element in which a lady shines most brightly and presides most beneficently. But we have always disliked to see them make machines of themselves and impair their health and usefulness by what we have generally considered their habitual, rather than their necessary, devotion to the needle.

—

STAUNTON, Nov. 17, 1852.

Mr. Editor,—Your letter came to me a few days since, and I have the pleasure of giving the information you desire at my earliest possible convenience. The sewing machine, now in my possession, was invented by J. M. Singer of New York. It is a small instrument, about 12 inches square, weighing about 65 pounds, and as simple in structure as I can conceive it possible for a machine for such purpose to be made. And yet with all its simplicity it is not possible to give you a full and satisfactory explanation of it.

There are three small wheels—one 7 inches diameter, the others about 4 inches diameter. The two smallest wheels are both operated by the larger one. From each of these smallest wheels there is a shaft passing across the machine, and terminating each with a small but strong friction wheel about half an inch in diameter. These friction wheels act in grooves made somewhat in the shape of a heart. One of these little wheels carries the needle bar, and the other the shuttle. The needle works perpendicularly and the shuttle horizontally, just below the point of the needle. There are two threads, one passing from a spool which turns on a wire at the top of the machine, and passing down the needle bar through the eye of the needle. The shuttle is about an inch and a half in length, and carries a small spool, the thread passing out at a small hole on the upper side. The machine is operated by a small pedal precisely on the principle of the old-fashioned flax wheel. Having arranged the thread according to the above directions you are prepared for work. Just below the needle there is a feed wheel which carries the cloth. On this the cloth is laid and there kept moderately pressed by means of a spiral spring. When the machine is set in motion the needle moves downwards, carrying the thread (which

passes through the eye about half an inch from the point) through the cloth down to the bottom of the groove in which the shuttle moves. There the needle stops for a moment and by a singular and most ingenious action gives a little "twitch" which makes a loop in the thread of the needle. The moment this loop is made the shuttle rushes almost with lightning speed through the loop. Thus the thread in the needle catches the thread in the shuttle and draws it up to the centre of the cloth, making a sort of double stitch. Thus every stitch is made with a certainty, regularity, strength and beauty which no human hand could give it. By means of a small thumb screw the stitch may in a moment be changed from the finest possible stitch to a quarter of an inch in length. It may also be made as tightly or loosely as you please. You may sew seams of any shape you wish. When prepared for work, which may be done at any time in from three to five minutes, it may be put in operation, or put aside as quickly and conveniently as a lady usually takes up or lays down her sewing.

We have had this machine nearly four months, and so far our experience with it has been in the highest degree satisfactory. At first, indeed, having no instructor, I found some difficulty in adjusting the needle, arranging the thread and other little things so as to make the machine operate to my entire satisfaction. But a little perseverance soon taught me that whatever defect there was in the sewing was not the result of any defect in the machine, but of a want of experience and skill, or of proper attention to the directions in myself. The machine will do the work of from six to ten persons. It will do nearly all the sewing, indeed I may say *all* the sewing usually needed by families, except putting on the buttons and making the button holes. My wife has learned to operate it with ease and skill, and says she would not exchange it for the best seamstress she ever saw. According to the best calculations I have made, if kept in operation at a moderate rate all day, say 8 hours, it will make a seam 500 yards long. My wife has made several pair of handsome pants between seven and ten o'clock at night, and says if she had one or two others to do the basting, pressing, making button holes and putting on buttons, she could make a pair every half hour.

The machine is of course made on the most strictly mathematical principles. The same wheel operating both the needle and the shuttle, these two parts *must* act in the most beautiful and unvarying harmony. These cannot fail to act rightly unless the large wheel which moves them be broken, which cannot be done by operating. The only things which seem to me possible to get out of order are the little friction wheels, spoken of above. And yet I must say that I do not see how they can get out of order if the machine be kept properly oiled. But even if they should by any means be broken they are so simple and small that any one who has a little mechanical skill can easily make them, or they may be sent by mail from the factory where the machines are made.

There are many other things I would like to tell you about this machine. But I have already taxed your patience to a much greater length, no doubt, than you anticipated. Should you ever find it convenient to call and see me it will give me great pleasure to show its operation and explain it more minutely and satisfactorily than I or any one possibly can on paper.

In conclusion, let me say, that should you decide to purchase one of these machines it will give me pleasure to put you in the way of getting one and give you any instruction you may need in using it.

With the most sincere regard,
I am your friend, &c.
T. T. Castleman.

P. S.—I have failed to say that the cost of the machine is $125 cash. T. T. C.

—

A NEW SEWING MACHINE.

The most extraordinary event of the Fair of the American Institute, now open at New York, and the one that has caused most sensation among the exhibitors, has been occasioned by the sudden advent of a new sewing machine.

A number of other machines of the same kind have been in constant operation in the garden since the opening of the Exhibition, and have been surrounded by curious crowds, astonished at their marvellous operation.—They little supposed that a man down in Pennsylvania was engaged at that very moment in perfecting a machine which would entirely surpass these, and be sold at less than one-quarter of the price.

But on Thursday the new machine made its appearance and was set to work by the inventor. An eager crowd shortly gathered around it. Members of the Institute, exhibitors and visitors, were alike struck with admiration at its simplicity of construction, the rapidity of its operation, and the neatness and excellence of the work it performed. The fame of the new machine rapidly spread through the city, and before night tempting offers were made the inventor by gentlemen from Wall street, who wished to become purchasers. You may judge of the simplicity of its mechanism from the fact that the machines will be sold for the low price of *twenty-five dollars each!* and any little girl can learn to operate with it in five minutes time. The machine makes a double stitch, each independent of the other, so that one-half the stitches may be cut or broken, and the work still remain firm. It works equally well on woollen, cotton or linen clothes.

The inventor is Dr. Otis Avery of Homesdale, Pennsylvania, a gentleman of moderate circumstances, but whose invention promises

to make his fortune. He has associated with him C. Nettleton, Esq. of 54 Wall street, and the machines will be manufactured by them jointly.

We regard the advent of this new invention as one of the extraordinary events of the times, because the simplicity and cheapness of the machine bring it within the means of nearly every family, thus working an entire revolution in the present mode of sewing.—*N. E. Cultivator.*

EXPLANATION.

In justice to the gentleman who furnished the State Agricultural Society the article on tobacco, which was published in our last number, we must state that it was written in September last, and the tables kept open until the inspections, &c. of this season were ascertained.

The Merchants' Magazine for November contains an article so similar in many respects that the one might be supposed to be copied from the other. But the writer of the article in the Planter did not see that in the Magazine until his own was published, although the Magazine is sent to him—but it is a singular fact that the agent of that publication in Richmond had not received the November number on the 4th of December.

AGRICULTURAL FAIR AT KEMPSVILLE.

We are very sorry that we received too late for extended notice an account of the fair held at Kempsville in the county of Princess Anne. It was highly creditable to the skill, taste and enterprise of that thriving and favored region.

HUNT'S MERCHANTS' MAGAZINE, AND DEBOW'S COMMERCIAL REVIEW.

If any commendation of ours could induce our subscribers to take these valuable periodicals, they would certainly have their lists increased to the full extent of our own. They are the only works of their class published in the United States, the one Northern and the other Southern, and contain an amount of statistical information not to be met with elsewhere, and of great value to those who aspire to something more than the mere routine of agricultural labor.

We are very sorry that our pages cannot, in consequence of the pressure of purely agricultural matter, be enriched with occasional extracts from these truly useful works.

SEED CORN—GOOD IDEA.

Our friend, Jos. C. Burton, one of the best farmers of Henrico, has sent to our office two ears of very fine corn raised by him last season, for the inspection of his brother farmers. He proposes that others who have good corn for seed, shall send samples of theirs to this office, that farmers who wish to procure seed may know of whom they can obtain such as is good. If his is better than others' he would be pleased to let his brother farmers have the benefit of it; if any one has better than his, he wishes to profit himself by using the best seed he can get. Several have already responded to his proposition. We will take care of the samples that may be sent, labelling them with the names of the persons who send them, and show them to all farmers who may desire to see. P. D. B.

GREAT SALE OF CATTLE.

Sixteen head of short horn improved stock, imported by the Sciota Company, were recently sold in Ohio, bringing $21,785, averaging over $1,300 each. The highest price paid was $2,520.

ANOTHER.—The entire stock of the valuable herd of George Vail of Troy, New York, comprising 61 head, was sold lately for an aggregate of $10,000. For the Yarm Lass cow $670, and for the imported bull, Earl Derby, $570 was paid.

EXTRACT FROM CORRESPONDENCE.

DOG LAW.

"*Mayfield, near Petersburg, Dec.* 13, 1852.

"Sir,—I suppose it would be hoping against hope, to hope that the Legislature of Virginia could be induced to touch the subject; but if they would pass some law restraining vicious dogs from destroying sheep, they would thereby add many thousand dollars to the profits of Virginia husbandry, and furnish the means of reclaiming many thousand acres of exhausted and now profitless land. The law, as it now

stands, is a nullity. It is not worth the cost of printing it in the code. Mr. Rives, for example, sends over one or more of the finest of the French Merino, at 3000 francs and charges, and shortly after they are safely landed at their place of destination some of the canine loungers take a fancy for French mutton, and make a supper of them. Mr. R. if he can find out the owner of the depredator, applies to a justice of the peace and has him, the dog, killed. But that does not bring the sheep to life, nor does it restore the cost and charges of the lost animal. Let the owner of the dog, under such circumstances, be at least made responsible for the damage."

For the Southern Planter.

NEGROES.

Mr. Editor,—I have read, with some degree of attention, your remarks on hiring negroes; and whilst I fully concur with you in the justness of your opinions, I nevertheless think that a more careful consideration of the subject will lead you to the conclusion that the root of the evil is more deeply involved in the laws of political economy than one would suppose. In fact it is the demand for labor that is the prime cause of this evil; and whatever increases that demand beyond a certain point has a tendency to increase the evil of which you complain.

I have observed an upward tendency in the price of labor since the year 1821 to the present time. At that period four hundred dollars could not be obtained for a negro man, and three hundred and fifty dollars was the maximum price of a very likely woman.—Shortly after this period, our first public work, the old James River Canal, was completed, with great difficulty, to Maiden's Adventure. This created a new demand for slave labor.

In 1829 the Southampton insurrection took place, and it was thought by many that the excitement in the Legislature and throughout the State, consequent on that event, would cause the price of slaves to decline; but to the surprise of all, it advanced, and has continued to advance up to the present time. It is true that there has been an occasional recession in price, but it has always rallied again, and only once has it gone down to four hundred dollars. After the action of the Legislature there was, with many persons, a feeling of insecurity with respect to their right of property in their slaves, and they either sold them or removed with them to the South. Of course this increased the demand for labor.

Again: the removal of the free negroes from the State operates directly to produce a vacuum, whilst the progress of internal improvements creates a necessity for labor to build rail roads and canals, so great indeed as to bring *foreign* labor into the State.

The new Constitution, being the second indulgence of the kind that the people have allowed themselves since 1829, by universalizing the right of suffrage, which the other had greatly extended, is thought to have exercised no little influence on this subject by increasing the foreign population, particularly in the cities. All these causes combined may justly be thought to operate on master and slave, both by creating a greater demand for labor, and by demoralizing the slave, whose value is always impaired by contact with white labor, partly because he observes that less labor is exacted of the white than of himself, and partly because a condition not much more elevated than his own, in some cases not so much so, receives more consideration and enjoys higher privileges.

The last thing to which I shall call your attention, as operating injuriously on the slave, is the influx of persons of the middle and higher classes from the free States. Supposed at home to have a horror of slavery, they very soon become so far reconciled to it here as to avail themselves of the institution by hiring "helps" for their families; and having no slaves of their own, they are only solicitous as to the labor without regard to the manner of obtaining it; and of course will, with or without intention, bribe and corrupt the negroes to obtain their services.

Though there is strong reason to believe that the tobacconists of Richmond *commenced* the custom of paying negroes to consent to be hired to them; but whether they did or not, the writer is firmly convinced that they have aided very much in spreading it over the State. For some years after the period first named herein, the writer hired out slaves annually and never heard such a question asked as you state to have been asked of Judge Scott; and it was not until sometime afterwards that he observed the difficulty of hiring out servants in such situations as the owner desired.

All the preceding reasons have convinced me that the evil is one not easily remedied, at least by writing. A very different remedy will have to be applied before the evil ceases, to wit, a thorough examination and change of the laws on this subject.

G.....

Buckeyeland, Dec. 21, 1852.

We should be pleased if our correspondent would review the present laws on slaves, free negroes and mulattoes, point out their deficiencies and suggest a remedy.—Ed. So. Pl.

CALVES.

Calves must have good keeping through the first winter or they will prove small and inferior cattle. A little meal given daily will do them no harm—oat and Indian corn are best.

From the Wool Grower.

FUTURE PROSPECTS OF WOOL, AND HOW TO GROW IT.

It is a fact, worthy of the most profound consideration by every grower of wool, that his occupation for the next ten years promises rich returns for invested capital and labor. During the last decade, there has been, in many of the old wool growing States, a large falling off in the number of sheep raised and pounds of wool grown. In 1840, New York had upwards of 5,000,000 sheep, being some over a quarter of all in the United States. Vermont then had over 1.600,000. Now, New York has only 3,500,000, and Vermont only a fraction over 900,000, and by January, 1853, her flocks will doubtless not exceed 600,000! The causes which have led to this result are various, but it is foreign to our purpose to speak of them. In many other States there has been a similar decrease or falling off.

For ten years. the increase of sheep throughout the Union has been only one and a half millions, while the population has increased from eighteen to twenty-four millions. The American population doubles in about twenty-five years, without the aid of foreign immigration; and it is moreover true, that the annual *increase* of of our population requires the fleeces of 1,000,000 of sheep. Six pounds of wool to every man, woman and child in the United States is the estimated average amount required yearly for their comfort and use. Consequently, they would consume 150,000,000 lbs. Of this amount we grow 52,500,000, or a trifle over two pounds for each individual. Now, we actually consume annually three times the amount we grow, and this compels us to buy of foreign nations 100,000,000 lbs.! Of this, 25,000,000 is bought in the raw material, and the remainder in manufactured goods.

If it be a correct estimate that the inhabitants of the northern and middle latitudes require annually the wool of two sheep to each individual, then it follows that in many of the wool growing countries of Europe, we shall look in vain for exports, in consequence of the large gain of population over the gain of their flocks.

France, with a population of 36,000,000, keeps only a fraction over 36,000,000 sheep. Austria, with a population of 36,000,000, has only 33,000,000 sheep. Great Britain and Ireland, with a population of 29,000,000, keep only 32,000,000 sheep. The sheep of Russia number 39,000,000, while the population is 60,000,000. Spain does better; a population of 13,000,000 keep 18,000,000 sheep. Prussia has 15,000,000 inhabitants and 16,000,000 sheep. Turkey, with a population of 11,000,000, keeps 14,300,000—while Sweden and Denmark keep less than 3,000,000, with a population of over 5,000,000. In short, in seventeen of the largest nations of Europe, the sheep number only 207,171,351, while the sum total of the population of these countries is over 225,000,000.

It appears clear that these nations cannot export wool, for in many of them wool growing has reached its utmost limits, and yet do not raise enough for their own consumption! The Australian colonies, since 1843, have never exported less than 16,000,000 lbs. annually, and often as high as 40,000,000. Since the discovery of the gold mines, however, which has caused great neglect of the flocks, England has suffered materially in her receipts of wool from that region. It appears that there is a deficiency of sheep and wool throughout nearly all of the great wool growing sections of the globe; and hence we infer that wool, especially good wool, will command a high price for a series of years to come.

Heavy drafts are being made upon the old stocks of cloths in market, and when these are exhausted we may expect a permanent rise in the manufactured fabric. Many of the countries that once exported fine wools now export none. The South American States still export large amounts of wool, but it is of the coarser grades and cannot enter into competition with wool grown in the United States. From whatever point we view the subject, we must utter it, as the strong conviction of our best judgment, that the inducements to grow more wool present stronger claims upon the attention and enterprise of the American farmer, than those of almost any and every other of the varied pursuits of agricultural wealth.

"But," says the reader, "to enable me to grow more wool, must I not purchase more sheep?" I reply,—not necessarily. You can grow much more upon the same number than you ever have, doubtless.—Every one knows that the same acre of tillage land may be made to produce from 30 to 50 per cent. more than its usual yield, by the aid of fertilizers. So may a flock of sheep be made to shear from 30 to 50 per cent. more of wool, by the aid of fer-

tilizers, or in other words by adapting their feed to the make and growth of wool. One of the constituent parts of wool is albumen; hence those grains which contain the largest per cent. of albumen, make the most wool when fed to sheep. Wheat and rye contain largely of it,—peas and beans have 29 per cent. of it,—oats 10½ per cent. only.

It has been ascertained by actual experiment,* that the following are the results of feeding different kinds of roots and grains for the production of wool:

1000 lbs.	Potatoes, raw, with salt, make	6¼	lbs. wool.
Do.	Mangel Wurtzel, raw, make	5¼	"
Do.	Wheat, make	14	"
Do.	Oats, make	10	"
Do.	Rye, with salt, make	14	"
Do.	Rye, without salt, make	12½	"
Do.	Barley, make	11½	"
Do.	Peas, make	14¼	"
Do.	Buckwheat, make	10	"

These results (and they are the same by different experiments) show that peas, wheat and rye, produce the greatest increase of wool, and give about twice the number of pounds of wool that roots do when in equal weight. Corn meal, oil cake, and such gross substances, are the proper feed when fat mutton and tallow are the objects. But the flock-master, whose main object is wool, must rely on good hay and water, and a daily moderate allowance of these grains, with some potatoes or carrots as green food, for the attainment of his object, viz: *the greatest amount of good wool*, and that in the very best condition.

S. B. Rockwell.

Cornwell, Vt. Nov. 1, 1852.

From the Rural New Yorker.

WIRE FENCES—AN EXPERIMENT.

Messrs. Editors,—My farm being nearly destitute of fencing materials, I have recently tried wire for replacing worn-out fences.—While fixing on my plan, I read the articles which have appeared on the subject in the back volumes of the Rural, and examined other books and papers. Judge Osborne of Albany, who has built several miles of this fence, also favored me with his advice, and I finally settled on a plan presented by Mr. Norcross, an ingenious mechanic of Cicero, from whom I obtained much information on the subject. I have erected eighty rods of wire fence the past season, as follows:

I set my posts four rods apart, about as permanent as I would for a common board fence, and between the posts drive down two small cedar stakes—this leaves a space between the stakes of twenty-two feet—then in the middle of each space, I put what I call an evener, that is a strip of board about an inch thick, three inches wide and five feet long; the edge of the board sawed into with a little saw made for the purpose, so as to let the wire in about one inch, where it connects with a hole a little larger, than the wire and about an inch above the cut of the saw. I fasten the upper and lower end of the evener to its place with a small annealed wire. The first post must be large and set very permanent and well braced, and on this post place wheels turned out of almost any kind of wood, one and a half inches thick, and in diameter sufficiently large to spread the wire to such width as may be deemed proper. This must depend, in some measure whether you reside in a respectable, law-abiding town, where they keep their cattle, hogs, &c. confined to their own premises, as they should, or whether you reside in a lawless town or neighborhood, where they let them run at large, as they should not. I commence by fastening the wire as high on the first post as I wish to make the fence, then take the wire carefully off the roll, and go about twenty-five rods to a kind of frame made of two posts, with wheels on, put the wire round the top wheel, and go back and forth till the fence is as many wires high as may be desirable. When I commence stringing the wire, I put in my staples as I pass along; this keeps the wire up and makes it stretch more evenly. Thus you have twenty-five rods strung, but it should not be stretched tight until you put up as much more, and then when stretched it will pull both ways alike. In this manner you may go a thousand miles without a permanent post or frame, except at the beginning and end of the fence.

I use staples made of wire, No. 12, which may be drove into cedar posts or stakes without boring, by flattening the ends a little with a hammer—any man can make ten or twelve hundred staples in a day. My fence is six strands high, but it should be seven for an outside or road fence, and five for an inside fence. I commence stringing my wire at the top, go down to within twelve or fifteen inches of the ground, and to fill up the space below I plough two or three furrows on each side—if sod, pitch it under the fence with a barley fork—follow with a shovel and throw up the loose dirt, bringing it up to a ridge under the wire; this makes a kind of ditch on each side, and prevents sheep, hogs, &c. from going under, and also gives notice to horses and cattle that there is something in the way of their progress; besides it makes it quite difficult for them to get over.

I used charcoal wire, No. 8; of this it takes five bundles for forty rods, six strands high, (a bundle weighs 63 lbs.) My wire cost six cents a pound, but I cannot say that it is any better

* De Raumer.

than the common wire which costs from four and a half to five cents. My fence cost about fifty-four cents a rod. A good, substantial wire fence, seven wires high, may be built in most localities for sixty cents a rod, and I think it will last three times as long as a rail fence. I painted my fence with red lead and oil. I took a piece of soft sponge dipped in in the paint, and went along at the rate of eighty rods a day; it took five pounds of red lead and two quarts of oil. Mr. Norcross has a plan for fastening the ends of wire together. He turns them up a quarter of an inch—puts them in a mould made for the purpose, and runs in melted zinc, which makes it stronger than any other part of the wire. Mr. N. has an application before the Patent Office now pending, to secure a right for this and other parts of his plan.

I made my fence partly as an experiment, with a view of preventing snow drifts in the road, which fills up every winter so as to prevent passing with teams. That my fence is anything like perfect, I do not pretend, but I think it far the best plan that has come to my knowledge, and with my present views I shall adopt wire fence as the best and cheapest I can build.

A. Eastwood.

Cicero, Onondaga Co. November, 1852.

CHEAP DRAINING.

It is stated in the foreign correspondence of the Michigan Farmer, that a method of cutting drains has been adopted in Scotland, requiring much less cost than formerly, being all done with the plough. It is very useful in all cases where the ground is clayey and tolerably free from stones. "In the first place a common plough is passed back and forth, turning a furrow out on each side. Then follows the draining plough, which goes down from two to two and a half feet, the mould-board being so formed as to turn the earth all out. In this manner twelve acres in the vicinity of Sterling were drained with three ploughs, in one day, the tile being laid in the furrow just as the plough left it. The earth was returned to the ditch by means of a scraper, in the form of the letter V, the legs, of course, protruding forward, and a team attached to each leg, on each side of the ditch."

We have been long since satisfied that the cost of excavating ditches might be reduced by more horse labor than is generally used. For instance, let a Michigan subsoil plough, with ample team be set in a foot deep—a thing very easily done; by throwing a furrow each way (leaving but a narrow strip in the middle) the first foot of the ditch is at once thrown out with sufficient rapidity to prepare some miles for the spade in each day. By running twice each way, a greater depth and more perfect work might be attained. A regular and thorough system of draining is at present quite expensive, costing some twenty-five or thirty dollars per acre; and if its cost could be reduced one half by the application of horse power, it would greatly contribute towards its general introduction,—and be worth millions to the country, lying, as it does, in most cases at the very foundation of successful farming.

From the Supplement to the Southern Recorder.

USEFUL RULES.

Messrs. Editors,—I found myself at much loss for a few simple rules to work by when I first began on my own hook, therefore, submit the following to your discretion as suitable matter for the Supplement. Young beginners may properly appreciate them, as I would have done some years ago, and would still, farther light upon these and kindred subjects.

To find a good length for rafters for any house. Rule: Multiply the width of the house (from out to out) by eleven and divide the product by eighteen, the quotient is the answer.

To know how far apart rafters must be, the length of plate, number and thickness of rafters given. Rule: Deduct the thickness of all the rafters on one side from the length of the plate, and divide the remainder by the number of spaces, (which in this case, is one less than number of rafters;) the quotient is the answer. But if the rafters are irregular in thickness, to find the distance from middle to middle. Rule: Deduct the thickness of one rafter from the length of the plate, and divide the remainder by the number of spaces; the quotient is the answer. For sleepers to a house, where one is put at each end of inside space, deduct from the whole space, as from the plate for rafters, and proceed by the same rule precisely. But where sleepers are let into the side sills, and the end sills are made to answer for two sleepers, the spaces will be one more than real sleepers; and to find from middle to middle, in this case. Rule: *Add* the thickness of one sleeper to whole space between end sill, and divide the same by the number of spaces; the quotient is the answer. To mark the places, then, begin half the thickness of one sleeper on the end sill, and the distance of the quotient mentioned, along the side sill, will show the place for the middle of the first real sleeper, and so on for all the rest. To find the length of a brace, (called a "square brace",) where the mortises are equal distances from the corner (say six feet up post and the same out upon the sill.) Rule: Multiply one side only (say six) by seventeen, and divide the product by twelve; the quotient will be near enough the correct answer for common purposes.

For other kinds of braces it will be convenient to take as a table; that one foot *out*, and one foot four inches *up*, will require a brace

one foot eight inches long. And where a longer brace is required, multiply each sum in the table by any same figure, the proportion in the several products will be the same, and the answer minutely correct, viz: Multiply the table by five. Answer is five feet *out*, six feet eight *up*, and eight feet four inches the *length* of a brace that will fit.

To find the shape for a square brace, the iron square is commonly laid down 12 and 12 at the corner of the timber, but for this other kind it must be laid down 12 and 9, instead of 12 and 12, and the scribes made, one with long slope, the other with short.

To make a cog-wheel where the number of cogs and their size and spaces have been determined, the sweep staff is the first work. This sweep staff must be of such a length as to describe a circle which will contain the certain number of cogs and spaces, and no more.—Then to make a sweep staff, for a wheel which is to contain 92 cogs, 2 inches thick, and 2 inches space. Rule: Draw a line on the side of a jack plane, and mark the distance of one cog and space upon this line, (say 4 inches,) divide this 4 inches into 11 equal parts precisely, take 7 of these 11 parts upon your compasses, with the compasses thus opened to seven-elevenths of a cog and space, step in a straight line upon the sweep staff, and at each step, count four cogs, to any number, but 23 steps is the length for a sweep staff that will describe a circle which will contain 92 steps on the circle, of four inches each. It is evident then we have this general rule: Seven-elevenths of a cog and space, from the centre outward, is equal to four of these cogs and four spaces, in the circumference. And after the same rule, seven-elevenths of two feet, as a *half diameter* is equal to (twice 4, viz:) 8 feet, or more properly, 4 steps of 2 feet each around in the circle.

To find where to strike the lines upon a square stick of timber so as to make a regular octagon or eight-sided piece. Rule: At the end strike a diagonal line from corner to corner. The difference between half this diagonal line and one side is the distance from the corner, to strike the line. A piece of timber 12 inches square, the diagonal line would be very near 17 inches—half of this is 8½, which deducted from one side (12 inches) leaves 3½ inches, which is the distance from each corner, to strike the lines. When the end of the timber is not convenient, mark its size upon a plank, and procced.

To ascertain the number of rails for a ten rail fence of any given length. Rule: Multiply the yards by four, the product is the answer. Example, a mile of fence, 1760 yards—7040 rails

Convenient Pocket Calculations.—7040 rails in a mile of fence. 1760 rails in a quarter of a mile; 490 rails in 100 yards, 100 yards is 40 panels; 100 panels of fence is 250 yards. 69 yards 20 52-100 inches square is one acre of ground; 60½ yards square is ¾ of an acre nearly; 49 1-5 yards square is ½ an acre nearly; 34⅘ yards square is ¼ of an acre nearly; 220 yards square is 10 acres; 155½ yards square is 5 acres nearly; a furlong is ⅛ of a mile, viz: 220 yards, a square rood is ¼ of an acre.

E. J. Blackshear.

Laurens County, Nov. 1, 1852.

PROTECTING MANURE FROM THE WEATHER.

One of the sources of profit, or perhaps we should say, one of the items of saving to the farmer, during the winter, is the manure made by his stock during this season. On the proper mode of saving this, much of its strength and consequently its value, depends. The too common mode of throwing it out of the barn windows, to take the alternate drenching of the rains, the freezing of the cold, and the thawings of the warmer weather, is not the most prudent course to take with it.

This species of manure is a compound of great value, if all of the ingredients can be retained until it is applied to the crops, where they will all be required, and used by the growing vegetable, to add to its size and productiveness. It is made up of vegetable and animal matter, both of which substances contain the due quantity of mineral matters, all of which may be required in the formation of crops, and through them, for the sustenance of animals. Now if a part of these be washed out and carried off by the rains and melting snows, or wafted away by the winds, in the form of gases, brought out by the fermentation which is sometimes induced by the changes to which it is subject, there is a corresponding loss. Hence, if you can conveniently have it put under cover, by having a shed built over it, or by having a barn cellar into which to throw it, you will be a great gainer every year.

The editor of the Boston Cultivator gave a hint on this subject, not long since, in which he alludes to what is called box feeding, in England. In that country, you are aware, farmers make quite a profit by stall feeding cattle while fattening them for market. They, therefore, sometimes put their cattle into pens, say ten feet square, and feed them, keeping them well littered, and thus accumulate a large quantity of manure, by building up the sides of the pens or boxes, as the manures accumulate, in order to keep the cattle in.

Stall feeding for market would not be profitable in all sections of the United States, but the results, as far as the accumulation and preservation of manures are concerned, may give knowledge to us, useful to practise upon in our management of this article, so essential to the farmer.

The following analysis is quoted by the Cultivator, made at the English Agricultural College, showing the difference in box manure,

that had been protected from the weather, and yard manure, that had not been so protected:

	Box manure. Per cent.	Yard manure. Per cent.
Water, - -	71.04	71.00
Nitrogenized matter, capable of yielding ammonia, 100 parts dried, - -	2.37	1.07
Salts, soluble in water, containing organic matter, -	10.07	4.06
Organic matter, -	5.42	1.82
Inorganic matter,	4.28	2 78
Phosphoric acid, -	0.03	0.26
Alkalies—potash and soda, - -	2.00	0.08

Thus you see that there is quite a difference, and it shows the advantages of sheltering this species of dressing. A very little calculation will show that the gain or saving made in a few years would amply repay the extra expense of building sheds or digging cellars for this purpose.—*Maine Farmer.*

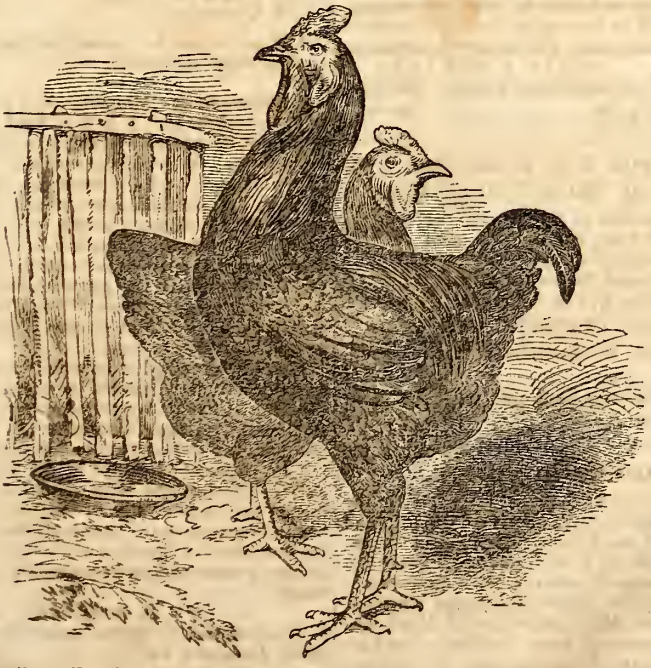
PAYMENTS TO THE SOUTHERN PLANTER,

From December 1st, 1852, to January 1st, 1853.

Richard Allen to September 1853,	$1 00
F. W. Scott to January 1853,	3 00
Dr. J. S. Lewis to October 1853,	2 00
R. N. Herndon to September 1853,	1 00
John P. Willcox to September 1853,	1 00
A. B. Duncan to July 1853,	1 00
P. D. Samuel to January 1853,	1 00
William S. Dance to January 1854,	1 00
Mrs. M. Henricques to January 1854,	1 00
Ro. Worthington to July 1853,	1 00
R. C. Dickinson to January 1853,	2 00
William P. Tatum to January 1854,	1 00
Joseph C. Burton to January 1853,	1 00
Tucker Carrington to September 1853,	1 00
James Heizer to August 1853,	1 00
C. M. Adkisson to January 1853,	1 00
John G. Guthrie to July 1853,	1 00
W. S. Morton to May 1854,	1 00
Mrs. E. O. Carter to September 1853,	1 00
George W. Fones to September 1853,	1 00
Peterfield Trent to January 1854,	1 00
James M. Ransom to September 1853,	1 00
George W. Gilliam to January 1854,	1 00
William W. Watkins to January 1854,	1 00
Col. P. W. Meredith to January 1854,	1 00
G. A. Walden to September 1853,	1 00
Rudolph Turk (in full,)	83
Dr. P. H. Foster to January 1853,	5 00
J. Pamplin to January 1854,	1 00
W. P. Tucker to January 1854,	1 00
R. P. Atkinson to January 1854,	1 00
Reuben Ragland to January 1853,	4 00
T. Junius Eppes to January 1854,	1 00
Richard I. Gaines to January 1853,	1 00
James E. Tucker to January 1854,	1 00
John H. Wilkes to January 1854,	1 00
James E. Harris to September 1853,	$1 00
J. H. Perkins to September 1855,	2 00
William Smith to July 1852,	2 00
Robert Campbell to January 1854,	2 00
Sterling C. Anderson to January 1853,	1 00
Thomas J. J. Grymes to January 1853,	1 00
Joseph Weaver to July 1853,	1 00
William P. Waring to January 1854,	3 00
Warner L. Waring to January 1854,	1 00
Thomas Whitworth to January 1855,	3 00
Richard Hawes to July 1853,	1 00
F. M. Irvine to July 1853,	1 00
A. L. Young to January 1853,	1 00
Col. George Townes to January 1856,	5 00
H. S. Langhorne to January 1853,	1 00
John Gilmer to January 1854,	1 00
Ro. W. M'Candlish to January 1853,	7 00
R. C. L. Moncure to January 1854,	1 00
John M. Conway to January 1854,	1 00
Samuel S. Brooke to January 1854,	1 00
Peter D. G. Hedgeman to January 1854,	1 00
John Schooler to January 1854,	1 00
James T. Dunkum to January 1854,	1 00
John H. Maddox to September 1853,	1 00
W. B. Cochran to September 1854,	3 00
John S. Moon to July 1853,	1 00
G. S. Harper to January 1854,	1 00
James H. Shepherd to January 1854,	1 00
L. M. George to January 1854,	2 50
M. H. M'Cue to July 1853,	1 00
James Faris to January 1854,	1 00
Miles C. Tunstall to January 1854,	1 00
W. H. Sims to January 1853,	1 00
James E. Bowles to January 1854,	1 00
F. K. Nelson to January 1854,	1 00
Ambrose Ford to January 1853,	6 00
E. G. Booth to January 1854,	1 00
R. W. N. Noland to July 1853,	1 00
Alexander Irvine to January 1853,	7 00
Samuel T. Brown to April 1854,	1 00
W. A. Carter to January 1854,	1 00
Mrs. F. T. Harvey to July 1853,	1 00
Edmund Ruffin, Jr. to January 1854,	1 00
General Steinberger to January 1852,	5 00
Samuel Heflebower to January 1854,	1 00
H. G. Maslin to January 1854,	1 00
Wilson P. Coe to January 1854,	1 00
William D. North to January 1854,	1 00
N. W. Harris to January 1854,	1 00
W. W. Boyd to January 1854,	1 00
John R. Quarles to January 1854,	1 00
Carey Breckenridge to January 1854,	1 00
Robert Pollard to January 1854,	2 00
Edward Stabler to January 1854,	1 00
Geo. W. Ruffin, M. D. to January 1854,	1 00
W. H. Vaughan to January 1854,	3 00
W. Gee to January 1854,	5 00
Col. T. J. Boyd to January 1854,	1 00
Alexander Kerr to January 1854,	1 00
Dr. John W. Supton to January 1854,	1 00
James Arnold to January 1854,	2 00
John Baker to January 1853,	1 00
Samuel E. Lee to January 1854,	1 00
Dr. William Selden to January 1854,	3 00
John E. Flournoy to January 1854,	1 00
Whitley Fullin to July 1853,	1 00
Dr. John T. Smith to July 1853,	1 00

Mat. Harrison to January 1854,	$1 00	Benjamin Estill to April 1853,	$1 00
Henry D. Smith to July 1853,	1 00	A. H. Moorman to January 1854,	
W. B. Aston to July 1853,	1 00	V. O. Witcher to January 1854,	
A. Fuller to July 1853,	1 00	William F. Gardner to January 1854,	5 00
A. Hendricks to July 1853,	1 00	Ro. W. Calloway to January 1854,	
E. H. Herbert to January 1853,	4 00	John M. Patton to January 1854,	
Fr. Fitzgerald to January 1854,	1 00	Thomas C. Moorman to January 1854,	
F. W. Brown to June 1853,	1 00	Capt. R. A. Booker to January 1853,	1 00
James W. Gresham to January 1853,	1 00	A. Burton to January 1854,	1 00
Samuel Drake to January 1854,	1 00	M. Snead to January 1854,	1 00
John T. Goodwin to January 1854,	1 00	G. H. B. Fitzhugh to January 1853,	1 00
J. B. Edwards to January 1854,	1 00	B. O. L. Howell to January 1854,	1 00
John W. Lester to January 1854,	1 00	James D. Crawley to January 1854,	1 00
A. W. Talley to January 1854,	1 00	Dr. A. W. Gay to January 1854,	2 00
James A. Cochran to January 1854,	1 00	Jesse S. Armistead to January 1854,	2 00
Edward C. M'Gehee to January 1854,	1 00	William E. Glen to January 1854,	1 00
Matthias Lamb to June 1853,	1 00	David C. Anderson to January 1854,	1 00
Peter Hanger to January 1854,	5 00	John Crichton to October 1854,	1 00
J. R. Maben to June 1853,	1 00	Robert Maddox to January 1853,	1 00
John Lawton to January 1854,	1 00	M. Davis to January 1854,	1 00
Dr. George Fitzgerald to January 1854,	1 00	Bannister Coffee to January 1854,	1 00
Frederick Gilliam to January 1854,	1 00	S. G. Davis to January 1854,	1 00
R. B. Brashear to July 1853,	1 00	Dr. H. Lewis to January 1854,	2 00
J. Marshall M'Cue to July 1854,	2 00	James M. Garnett to January 1854,	2 00

CHOICE POULTRY.



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

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, Richmond, Va. W. A. BUTTERS, 139 Main St.

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—tf

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.

Loudon'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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