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THE SOUTHERN PLANTER AND FARMER

DEVOTED TO

Agriculture, Horticulture, and the Mining, Mechanic and
Household Arts.

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

CH: B. WILLIAMS, - - - - EDITOR AND PROPRIETOR.
WM. L. HILL, - - - - GENERAL AGENT.

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Southern Planter and Farmer,

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CH. B. WILLIAMS, Editor and Prop'r.

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RICHMOND, VA., JULY, 1868.

Vol. II---No. 7.

What Shall We Do?

No. 3.

(Continued from page 332.)

The following letters are all so good in their kind, and so plainly and sensibly written, that they need no introduction; and as I have one or two observations to make on one or two of them, not however of a disputatious character, I think it fairest to pursue the rule I always followed when an editor, and let the gentleman to be answered, confuted or commented on, speak first. I wish that all written controversy could be conducted on that principle. The writers are all well known in Virginia except the Messrs. Telfair—father and son—from Ohio. It is proper, therefore, that I should say they stand as high in my opinion as any gentleman of our own State. I endorse them fully, particularly the son, Mr. W. B. Telfair, because with him I have the pleasure to be personally well acquainted:

CORTLAND VILLAGE, N. Y., April 29, 1868.

Dear Sir :—I cannot give you the number of lambs now annually consumed in New York, Brooklyn and the other immediately surrounding towns. I think Mr. J. R. Dodge, Statistician of the Department of Agriculture, at Washington, is likely to possess the latest statistics on the subject, and I will write him herewith and request him, if he has the facts, to communicate them to me for your benefit and that of other enquirers. On receiving his answer I will immediately apprise you. At present I will only say the consumption is enormous.

Early lambs for the New York market should be dropped as near as may be to the first of February, and turned off to the butcher as

they reach 40 lbs. weight. Well managed, they should all reach this weight by the first of June. Choice, or fancy lots, ready for market thus early, fetch on the average, I should say, one year with another, not far from \$5 a head.

Full blood sheep of any breed, are not adapted to this production. The small size and comparatively slow maturity of the Merinos, of course, put them out of the question. The English mutton breeds cost too much and are too great consumers—especially for the thin herbage of much of your tide-water region. Probably as suitable ewes as any other for the purpose—and, all things considered, the most profitable ones—are the ordinary farmers sheep of Ohio, and some of the other Western States. They are descended from the old “native” sheep, so called, with some uncertain English and Merino crosses. They should have enough of the improved English blood to give them pretty good size; and say a fourth of Merino blood to increase the product of wool, and, what is very material, render them ready to take the ram earlier in the season. It is difficult to get English sheep, or those deeply crossed with that blood, inlambd early in September.

Sheep of this description are annually driven in great numbers from the Western States to the vicinity of New York—those not fat enough for butchering, being bought by farmers to feed for market. Many farmers keep the ewes over winter, raising a drop of early lambs from them, and fattening them (the ewes) the ensuing summer and fall on good pasturage, with a little grain after grass is injured by frost. They thus usually sell for about twice the first cost, or say \$5 a head. In this way the grazier obtains a lamb, a fleece and the manure, in addition to doubling his original outlay—or upwards of \$10 for an expenditure of \$2.50. From this is to be deducted merely expense of keep. On Virginia lands this would leave upwards of \$5 net profit a head, after deducting all expenses. At the present prices of Western sheep, the profits would be greater. From what I have learned of those prices, my impression is that inlambd, wintered ewes could have been bought *in the West*, before yeaning, with their fleeces on, for \$2.50 per head; and the dropped lambs would not probably yet add much to their price. The panic among sheep holders is *beginning* to subside, but unless there is a decided change, it is probable that immediately after shearing, good strong ewes with lambs at their sides can be bought for about \$2 a pair.

For the purpose of raising early lambs for market, good fair sized ewes are preferable—but the main point is to get those possessing

good milking properties. When bought with lambs at their sides, the appearance of the lambs will sufficiently determine that point. As a general thing the mongrel sheep of the West are good nurses and mothers. They are also hardy, easily kept, and have not been taught any artificial wants by that kind of care which is given to full blood sheep.

These ewes should be put to English rams. The South Down cross is highly approved of, as it is a fitting one in respect to the comparative size of the sire and dam, and it gives those dark colored legs to the produce which enables the butcher to sell them as South Down lambs in the market. These command an extra price among epicures, and other things being equal, they perhaps obtain a more ready sale generally. The crosses with the Leicester and other English Longwools are however larger at the same age; and with good sized Western ewes, there is not that difficulty which would naturally be expected in yeanning. The Shropshire Down would give both the dark legs and greater size; but I have had no opportunity to observe the comparative early maturity and other characteristics of this cross.

English breeders, who from soil, climate, &c., find it expedient for the purpose of growing lambs for market, to breed large improved rams with ewes of smaller and easier kept varieties—or with those who are from any circumstances better adapted to the locality—usually make it a rule to stop with the first cross;—that is to say, they do not continue to save their half, three quarter, &c. improved blood ewes for breeding, but sell them to replenish the breeding stock with ewes of the original variety. I think this will be found expedient in the tide-water zone of Virginia, for several essential reasons which I will not now stop to point out. But it may also be expedient, in many cases, to keep your Western ewes for more than a single year. As you live remote from the Western sheep droves, by far your cheaper course will be to send your own agents to the West to buy your sheep. You will thus escape paying the profits of the middle man. And it would be a great mistake to have them sent to New York and transported to Richmond by steamer, as you suggest. For economy, they should make the entire journey on foot, and by the most direct route; and Richmond is as near, or nearer to the proper places of purchase than New York. During the periods of spring and summer, when grass is most abundant, the expense of driving is quite small. June, immediately after shearing, will be a favorable time.

I cannot name, as you request, the precise localities where the sheep can be most advantageously purchased. These places would not always be the same. An experienced Western sheep drover is the man to find them. He understands all the "run-ways" of the trade. He knows precisely where and of whom to make enquiries. He buys fifty in one place and there learns who has a hundred more for sale. Thus he goes on buying, on a certain route, so that he can gather up all his purchases on his return—without losing much travel. He will get better sheep, and get them twenty-five per cent. cheaper than a "raw hand." There are probably fifty such drovers in this country, many of them men of character and responsibility. I think I could employ one to purchase for you if you cannot find a suitable person nearer home. But it would not "pay" to do this for three or four hundred sheep. The economical way is for neighbors to club together and send for as many as eight hundred or a thousand. If you thus engage a foreign buyer it would be extremely well to send some one with him to learn the "run-way;" the modes and the *mysteries* of the business, for future occasions.

The art of raising lambs for market is simple and in your mild climate will be in some particulars, far easier than here. Here last February, when the early lambs should be coming, the thermometer several times marked twenty degrees below zero. Such a temperature is no joke with a new dropped lamb, even in a close stable. I have seen the clover sprouting finely in March in Virginia. On this blessed 29th of April, when I write this, grass has but just made a perceptible start; occasional banks of snow yet lie in the deep hollows and gorges of the hills; my breeding sheep are still receiving roots, grain, and some hay! Our spring however is somewhat more backward than usual.

Western ewes, for lamb raising, usually receive no other food than hay up to the time of weaning. They are then fed roots, meal or bran slop, or roots and meal, in order to promote the greatest flow of milk. A portion of their stable, large enough for the convenience of the lambs, should be divided off by a partition, having apertures sufficient for their easy ingress and egress—while it will wholly exclude their dams. In this apartment they should be fed hay, meal, &c., as regularly as the old sheep are fed. They commence eating these very early and it greatly promotes their growth and accumulation of fat. It is better that the ewes nurse but one lamb each, as a good one always commands a good price in the proper season—while poor ones sell for poor prices and are often un-

marketable. I need not enforce the necessity of regularity in the time of feeding—cleanliness, and an adequate ventilation—and non-exposure to cold spring storms.

Yours, very truly,

HENRY S. RANDALL.

FRANK G. RUFFIN, Esq.

CORTLAND VILLAGE, N. Y., June 5, 1868.

My Dear Sir,—I received yours of May 30th and the copy of the *Planter and Farmer*. In mine of April 29th, I was only answering your specific enquiries in regard to the production of early lambs for market, and the best and cheapest mode, under the circumstances of your people, of getting flocks together adapted to that purpose. On *these* points, I do not know that I have anything to add or alter.

But had you asked me what kind of sheep I believed most suitable for general introduction throughout your State—as the basis of an extensive husbandry—I should by no means have recommended the common mongrel sheep of the West, crossed with English rams. While at points near direct water communication with New York and other cities, it may be very profitable to grow early lambs for market—it cannot be generally so in the interior; and if it were, you would soon glut the markets and render the prices unremunerative.

Mutton-growing, under proper circumstances, is highly profitable—especially with the long-wooled English sheep, whose wool now bears a high relative price—but I do not believe that mutton is adapted to *general* production in Virginia—partly for the same reasons which exist in the previous case, and partly because I do not consider your soil, herbage, climate, habits and systems of husbandry as well-suited to growing *English* mutton as those of some other regions with which you would be called on to compete. The large varieties of English sheep, like the Cotswold, Lincoln, Leicester, &c., do not herd well (i. e., remain healthy and thrive) in large flocks. Our experienced Northern farmers do not like to keep over about fifty together in the same field, or in the same winter quarters. In large numbers, they do not grow and fatten so well, and are quite liable to become diseased. And being a highly artificial animal, when diseases assail them, they spread rapidly and fatally. These great sheep, when they do well, pay *well* for their feed in mutton and wool; but they must have that feed abundantly and

constantly. A country of droughts, or of long, dry, scorching summers—a country where the feed becomes scarce or unsucculent at any period of the year—is not fitted to them. Nor must they be required to range over large surfaces. Their conditions for success are that they have good and abundant feed every day in the year without working for it—that they have nothing to do but to eat, lie down, and grow fat.

The “full-bloods,” or very high grades, are principally bred at the North by amateur farmers—ram-sellers—suburban farmers, or those who have good and rapid market facilities—dairymen—and occasional wheat-growers. It is rare to find over fifty or a hundred in a flock. They are usually a mere incident in the general farm-husbandry (except among the small suburban farmers). In all these situations, they have the pick of feed, abundant care—and they probably “pay” better than any other class of sheep.

Large sheep-farmers—men who make wool-growing the leading object, or a leading object, of the farm—very rarely grow either full-blood or grade English sheep. I have stated some of the reasons which render it difficult and unprofitable. And I apprehend, as already said, that those reasons have greater force in Virginia than here. In the present situation of things, you want sheep that demand less attention and labor—that will take care of themselves in summer, and require nothing but hay or corn-blades in winter—that can “rough it,” endure short keep, exposure and herding in large numbers. I think, too, it is much easier to overdo mutton-production than wool-production. In the former, the production already equals the consumption, and I may say the demand. This will continue to be the case as the demand increases, without any great region like Virginia commencing to grow mutton on a new and great scale. Should the latter occur, I think that the supply would soon exceed the demand—or glut the market so that prices would be unremunerative.

Our wool-product has never more than about equalled two-thirds of the domestic consumption. There is a great margin yet to fill; and, supposing it were filled, who would have to abandon the business—the farmers of Vermont, New York, Ohio, Illinois, etc.—or the farmers of Virginia? I have not had a doubt, for twenty years, that Virginia was as well-adapted to wool-growing as the North in *every* particular, and far better adapted to it in many particulars. Fine-wooled sheep are as healthy and productive with you as with us. The season when they require artificial food is far shorter with you. Taking the last fact in connection with the rela-

tive cheapness of your lands, you can, beyond all question, in vast portions of Virginia and other Southern States, grow wool at half the cost per pound that we can grow it. And it is now a perfectly established fact that fine wool does not deteriorate in climates like yours. On the contrary, it increases in softness and pliability, without the loss of any other valuable property, and hence actually improves in value.

These are no novel or merely theoretical propositions. Our most intelligent wool-growers all concede these facts. They understand it to be only a question of time when we of the North must be compelled to surrender fine wool growing principally to the South. We must do so just as soon as your people enter skilfully and generally into the competition. We *must* always grow sheep—but we shall do it eventually (that is, if the South drives us from the main field of wool-growing) more in the English style, keeping small mutton-flocks for market, and giving them high keep and care; and of the fine-wool sheep, keeping only *breeding* flocks, i. e., small flocks bred with great attention to improvement, to furnish the large *wool-growers* of other regions with choice breeding-rams and ewes to raise the character and quality of their flocks.

Where wool-growing is made the primary object of sheep-husbandry, there is but one breed which it is even worth while to talk about, and that is the Merino. It, in the case of the improved American Merino, gives a greater value, and even amount of wool, in proportion to consumption and cost in other respects, than any other breed. It is a hardy animal, withstanding short keep and other privations. It has no maladies that other breeds are unsubject to, and is not so liable to many maladies as the high-kept English sheep. It will herd in large numbers far better than any other valuable breed. In Australia, at the Cape of Good Hope, in Texas and in California, Merinos run together, summer and winter, in flocks of a thousand, fifteen hundred, and even more, without thereby adding to the danger of becoming diseased or unthrifty.

He who has the requisite means, gains some years in time by starting his flocks with full-bloods or very high grades. But profitable flocks for wool-growing purposes can soon be made by crossing common sheep with full-blood Merino rams; and where the rams are really of pure blood and superior, the grading up is more rapid than any one, unused to the facts, would expect. My late friend, George Wilkins Kendall, of Texas, bred the miserable hairy Mexican ewe—far inferior to our common sheep—to Merino rams, and the third or fourth crosses produced fine wool, that sold well in the market.

Even the second cross produced saleable and profitable wool. The half-blood sheep were twice as valuable as the Mexican, and the three-quarter blood perhaps twice as valuable as the half-blood. So he obtained good profits from the start, and rapidly built up an excellent grade-flock.* I know these facts, for I furnished him with rams on several occasions, was in constant correspondence with him, and had abundant opportunities to observe the progressive character of his wool. I have also observed the same facts in a multitude of instances immediately under my own eye, where the cross was started on common ewes.

But enough on this subject at present. I have, crudely and in haste, given you an outline of my views in regard to the particular branch of sheep-husbandry which it would be most advantageous to introduce *generally* into Virginia—and it seems to me a most propitious period to introduce it. Your farms are large, and not fenced into small fields. Good labor is scarce. Your lands are, to a large extent, lying almost idle. Causes which I have not space now to enter upon have rendered fine-wool sheep cheap in the North. The present wool-tariff gives sufficient protection to domestic wool; and when business and trade generally revive, wool-production will revive, and must be extremely profitable in Virginia. Even now, it must be more profitable than any other husbandry which there is available means in the hands of the proprietors to introduce or restore on a very extensive proportion of your large Virginia farms. And when trade does revive, it will cost you at least twice as much to buy fine-wool sheep as now. Good ones will be scarce—for the number has not been increasing in the North. Our small growers have been discouraged by the low prices of wool for the last two or three years, or what are low prices for *our* needs and expenses (40 to 50 cents per pound); and have sacrificed their flocks to enter upon dairying in New York, and upon other branches of stock-raising and grain-growing in the West. Even our larger growers have not *extended* their flocks; partly for the same reasons, and partly because they are fearing a rapidly increasing and destructive competition from the South and from our Pacific States. Therefore, in my judgment, *now* is the time for Virginia to embark in this production.

Very truly yours,

HENRY S. RANDALL.

F. G. RUFFIN, ESQ.

* He also bred full-blood sheep.

WELBOURNE, March 6th, 1868.

Dear Ruffin:

* * * * * You know that I much prefer the Southdown, but as the Yankees destroyed my old flock and my ability to purchase another, I have been obliged to content myself with Merinos. I bought one thousand Merino ewes and divided them into three flocks. My profits were just in proportion to the care and food given them.

On one farm I placed 350 ewes—cost \$4 50,	-	1,575 00
Sold 1,575 pounds of wool, at 40 cents,	-	630 00
Raised 287 lambs, at \$2 50,	-	717 50
Old flock 330, at \$4,	-	1,320 00
		\$2,667 50

These sheep had no corn, but had, morning and night, as much nice hay (clover and timothy mixed) as they would eat clean. This flock was in the charge of the best man I have ever had with my stock. He takes great pride in his flock, and says he is determined to have the best in the State. This winter he has lost but one ewe, although you see in my statement he lost twenty last winter, most of them by dogs. The flock is better than when I purchased, but as sheep have fallen, I have put the flock at less than cost in last estimate.

I would advise no man to buy sheep unless he intended to give them *regular* attention and protect them from dogs. If I had bred my ewes to strong Southdown rams, I should have raised more lambs, and they would have brought one dollar per head more. To show you the necessity of care—I had a flock of beautiful young ewes running in my meadow. A negro hauling hay from the stack-yard left the fence down, and the ewes crowded in around the stacks, and while eating, a horse got in among them and killed ten before the sheep left the stacks.

Wool is too low to breed fine-wool sheep. We must combine wool with mutton.

I will try and send you a report from this my most successful flock after shearing. I made no calculation as to the rams, because their wool paid a very fair interest on their cost.

I hope to have a meeting of our Club for the improvement of horses shortly, and a "colt-show" in June. Can you not be with us at the show?

I had almost forgotten your principal question. I think I can feed at least eight hundred sheep with the food required for winter-

ing one hundred cattle. If the sheep are kept from the grass until it is two or three inches high, five sheep will equal one steer. But if the sheep are allowed to run on the same pasture winter and summer, two sheep will equal a steer. If the grass is eaten into the ground, it seems never to grow again while the sheep are upon it.

* * * * *

I have kept as many as three hundred Merinos without *injury* to the flock, but I have always found when I subdivided them into flocks, from sixty to one hundred each, they improved. If you have large flocks, be careful to take out any lame, thin or weak sheep, and put them by themselves. Foot-rot is as catching as small-pox.

I doubt if sheep are as profitable as cattle on our best grasslands, but there are thousands of acres in Virginia where sheep would pay, but where the grass would not fatten cattle. If I had to commence anew, I would buy good short-legged common ewes and breed them to Southdown rams, and raise lambs for the butcher.

* * * * *

Sincerely yours,

R. H. DULANY.

WILMINGTON, April 22d, 1868.

My Dear Sir,—Since the reception of your letter of the 27th of February, I have been constantly engaged in court, and have not had leisure to answer. I sent your letter to my father, and requested him to write you the results of his experience in sheep-husbandry. I enclose you his letter principally in reply to your first question. In addition, I have made some inquiry myself among practical sheep-growers here to enable me to reply to other questions.

You wish to know why we, so near Cincinnati, raise sheep for wool instead of mutton. I am informed that the mutton-market of Cincinnati is not a good one; and such as it is, it is almost glutted from the counties immediately around it, and particularly so from the adjacent counties in Kentucky. It is said, too, that our climate and grass are better adapted to fine-wooled sheep than to mutton-sheep—the fine wool protects more effectually from the cold, which is said to be too great here for the coarse-wooled sheep. Our grass, it is said, scours sheep early in the season, from April to July, so that they do not get fat until July, while on the prairie-grass of the West they fatten from the start. Our largest wool merchant here for a number of years tells me that the wool of this section of Ohio, Western Virginia and Pennsylvania, commands about ten per cent. more in the Eastern markets than any other wool. It would seem

to indicate that this latitude is about the best for fine wool, being neither too cold nor warm, while it is yet too cold for the fine-wools.

2d. Our lands are decidedly better corn-lands as an average than those of Augusta. Not so good for wheat. Our wheat-crop has failed almost entirely for the last three years, and from twelve to fourteen bushels is a fair average, I suppose. The grass of Augusta is perhaps as good, if not better, than ours for sheep—at least I am told that the lands of Washington county, Penn., which are, I think, very similar to those of Augusta, Va., are better grass-lands for sheep than ours.

3d. Two pounds of hay per day and one pound of oats is estimated as the best feed for sheep in the stable. Some give one ear of corn per day instead of oats, but it is thought that oats is the best feed. Five bushels of oats for the winter to the sheep, I believe, is the estimate. If they run out and have winter-grass, they need nothing else. Three sheep to the acre, I believe, is the general allowance.

People here say you can make nothing from sheep with lands at fifty dollars per acre. Labor, corn and hogs alone make them pay. Lands worth from five to twenty dollars in large tracts are made to pay with sheep.

Our lands being, to a large extent, corn-lands, and being subdivided into comparatively small tracts, corn and hogs are our chief aim—with wool enough to pay the June installment of taxes.

* * * Yours truly,

WM. B. TELFAIR.

The following statement was made by Mr. Isaac Telfair, to his son, who enclosed it in the above letter :

I feel very much interested in Mr. Ruffin's efforts and plans for varying the products of Virginia, and adapting their economy and labor to their altered circumstances.

Concerning sheep-husbandry, I have no statistics to communicate. I have only the results of sixteen years' experience in the business of handling sheep.

About thirty years since, I undertook to make a sheep-farm or walk in Ohio. I had a large body of unimproved land in the *woods*, which yielded me nothing. I had but little capital, and no *labor*. How was I to manage my resources ?

1st. I enclosed about two thousand acres in a large square enclosure for a sheep-range or walk. There was but little tame grass or pasture in this enclosure. The sheep lived on wild grass or herbage most of the year—summer and fall.

I placed tenants in each corner of this enclosure, and some along the lines, who accepted their leases five years for the improvements they made.

In the meantime, I spent some money in clearing out grounds for meadows and corn-fields on each of these tenements, which, in addition to the improvements made by the tenants in the course of five years, became sufficient to winter my sheep—that is to say, the meadows I had cut amounted to about one hundred and fifty acres.

The hay I had packed in small stacks on blocks. The sheep fed themselves—that is, they ran to the stacks at pleasure. This hay and meadow-grazing wintered fifteen hundred to eighteen hundred sheep.

There was a contract with the tenants that they should, in the months of February and March, feed the flocks, in the care of each, one bushel of corn to each sheep; but I depended principally on my hay and the fall-pasture of the meadows, when the sheep could feed themselves.

In 1852-53, I wintered and sheared in the spring sixteen hundred and sixty sheep, which yielded me four thousand four hundred and thirty-six pounds of wool, which I sold at home for 51 cents per pound, or

The expenses were—			
Cutting 150 acres meadow,	-	-	200 00
Shearing and packing wool,	-	-	70 00
Washing sheep, &c.,	-	-	20 00
			\$290 00

I paid nothing for feeding or handling the sheep. I expected the sheep to take care of themselves (having the privilege of abundance of hay to run to at pleasure). The quantity of corn fed to sheep by the tenants was doubtful, and their attention not reliable. I lost no sheep from disease or dogs—great numbers were stolen. I sold none for mutton, my object being merely the fine wool and to make as much cash by it alone, with as little dependence on the labor (and expense) of others as possible. I did not keep a wagon, or run a plough (in my own name) on the land. I raised no hogs or cattle. I avoided everything that involved labor or expense, and depended solely on the wool.

The result of my experience, then, is, that gentlemen owning large tracts of land and no labor, should resort to grazing—especially sheep.

1st. Because sheep will live well (like a camel) on light dry pasture, where cattle, horses or hogs would perish.

2d. If suitably provided for, they can take better care of themselves than any other *out-door stock*. They require less food, and for a shorter time in winter. They may be penned at night, at the proper season, for a turnip or potato-patch. The great requisite is *large territory*. Sheep must not be crowded. It does not injure them for numbers to run together in the day-time, but they should not be suffered to sleep on the same lot so long as to contaminate the ground. It is this that produces and perpetuates diseases among sheep. Mine did not suffer from disease. The most they suffered from was thieves, my flock being superfine. If I were to undertake the business again, I would keep a shepherd, dogs and gun.

ISAAC TELFAIR.

P. S.—Some years since, previous to the late breaking up of society in Virginia, anticipating as I did the late commotions, I proposed to some of my friends to form a colony of fifteen or twenty, to emigrate to Illinois, purchase twenty thousand acres, enclose it in one large sheep-walk—each reserving his homestead to winter his own stock—the residue remaining for common use. But they then did not anticipate the necessity.

I think now that some such combination might be practicable and useful, under the present state of lands and labor, provided the grounds will produce light pasture for summer-grazing—oats for winter. It would be a mutual protection against sheep-thieves.

I. T.

WHITE MARSH, April 13th, 1868.

My Dear Sir,—Owing to the negligence of some postmasters, yours of the 27th ult. did not reach me until last Saturday, and I hasten to give you a meagre account of my experiment in sheep-raising.

This was begun in 1866, under the most unfavorable circumstances. My lands, principally low-grounds, uncultivated since 1861, had grown up in all kinds of weeds, broom-straw, golden-rod, thistles, &c. The sheep, kindly supplied by our mutual friend, Wm. M. Sutton, were of the most heterogeneous character, of every age, size and breed, picked up here and there, coming mostly though, I believe, from North Carolina—some from Augusta county, Va.—the rams purchased here not first-class—cross of Cotswold and South-

down, the fine stock of my father having been all taken by the Yankees. The flock numbered four hundred and fifty, about three hundred of which were ewes for breeding, remainder wethers, rams, and superannuated ewes. Increase from the ewes last year—fifty kept for breeding, 167 sold—217. Average of fleece, $2\frac{1}{2}$ pounds.

I at first divided them into three flocks, but soon found it impossible to keep them separate, and I do not believe their health suffered in consequence, as the extent of pasture was so considerable, most of the time being five or six hundred acres, the soil generally sandy, varying from black loam to grey, but wet, dreadfully so, all the ditches having, in great measure, filled up, and to drain the fields in cultivation was as much as I could do with my very limited means. From this cause I lost a great many that would have been saved if I could have put them on the highlands (which were in cultivation); moreover, such winters as the two last have, I think, been without precedent in the memory of this generation, and will long be remembered as peculiarly severe on stock; notwithstanding all which, however, the net profits now, supposing those on hand sold at what I can get for them, would be fully 100 per cent., and my land improved by them; but I have been in nowise prepared since the war to make a judicious experiment in sheep-husbandry, from the condition of my fields, fences and ditches, as also from want of capital to obtain the best stock. Soon I hope to be able to give it a fair trial, for I am entirely convinced that I can find profit in it; my opinion being based on experience and observation of twenty-four years' ownership in a small way—tending to which I will mention that on this farm, where the flock was always a hundred, the profits averaged \$532 for many years. At the same time, I think few farms in this section adapted to it. One altogether of highlands would hardly yield grass enough without improvement and considerable outlay for bone-dust or some such manure. One without a proper proportion of high-land would be too wet in the winter. I am getting my fields gradually laid down in grass with a view to stock-raising, and am buying horned cattle to fatten by the fall; but the supply of them is very limited now (the sheriff being the only salesman), and must continue so, as such stock cannot be brought from any of the counties above without a probability of their dying the *first* summer, and an almost certainty that they will the *second*—a great obstacle to their improvement by the importation of the best breeds—which does not apply to sheep, and pro tanto an argument in their favor.

Wishing you great success in your laudable efforts to do some-

thing for our unfortunate country, and desirous of giving all the assistance I can,

I am, very truly your friend,

J. PROSSER TABB.

F. G. RUFFIN, Esq., Summer Hill.

The pressing demands of the wheat and hay-harvest upon my attention are such, at this time, as to interpose a serious obstacle to the further development of my subject in this number of the *Planter*. I, therefore, reserve my comments on the above letters for the August number, in which I will resume and conclude the discussion on the subject of the preceding pages.

F. G. RUFFIN.

Our Exhausted and Abandoned Lands.

WHAT CAN WE DO WITH THEM?

No. 6.

(Continued from page 344.)

Soiling.—Any person who has found time and patience to read the preceding papers on this subject with the least attention, must have perceived that in order to carry out the system proposed in them, it is necessary to keep cattle off all lands that are under the plough; that is, lands that are cultivated from year to year in one kind of crop or another. This exclusion must be absolute and invariable. The idea of it lies at the very foundation, and without a rigid adherence to it there will be no such thing as advancing one step in the system as a whole. But the question will at once suggest itself, How is this to be done? In a region where the range for cattle is so poor as it is generally in these Southern States—in many parts of which there may, in truth, be said to be no range at all throughout the entire summer and autumn months—how is the farmer to get along unless, after harvest, he turn his stock upon his newly-reaped fields, according to the usual custom? The reply to my own mind, though fully aware of the difficulties which many persons see, or think they see, in regard to it, is very obvious: they are to do it by soiling; that is, by stabling and yarding horned cattle, and managing them in almost every respect as horses, instead of allowing them to run at large and sustain a half-lived, unprofitable existence by picking up such poor and scanty food as they may be able to find by running themselves half to death in the search for it.

Without further preliminary, I shall proceed with an attempt to show—

I. That this plan is practicable; and

II. That it must be profitable.

I. As to the practicability of soiling, I do not see how it can well admit of a question in any section where the grasses and the grass-leaved tribes of grain flourish as they do in every part of the country I have ever visited, from Maine to the Mississippi, with proper attention to the cultivation of them. To confine myself to North Carolina, where there is probably as much misapprehension on this point as in any other part of the Union, I can with truth say, I have never yet found the latitude and the longitude within her borders where clover and the best grasses could not, with a little painstaking, be made to produce abundantly, and, probably, to a greater profit, on a moderate scale, than any other crop that could be sown. I have seen them growing rank and luxuriantly in every part of the State; from the borders of South Carolina on the south, to those of Virginia on the north; and from Tennessee on the west, eastward as far as the first meridian west from Washington; and, though I have not seen them myself, I am well-satisfied, as well from abundant testimony as from the reason and nature of things, that these grasses will thrive equally well, on any soil suited to the cereals, to the very borders of the Atlantic. This, of course, excludes the parched, sandy lands of the naval-store-producing region where nothing will flourish but pines and pea-nuts. At any point within these bounds, the grasses named may easily be made to grow from three to three and a half, or even four feet high, and as thick as they can stand. In order to this, nothing is necessary but land comparatively fresh and in good heart, moderately manured, ploughed from twelve to eighteen inches deep, and well-pulverized. Now, plenty of such land may be found on any of our small farms; and one acre, or, at most, one acre and a half of it, may be made to keep a cow the whole year round, taking half for her summer and autumn, and half for her winter and spring food. Fed on this alone, without the assistance of meal, but how much more with a moderate quantity of grain of some kind, she may be made to supply a family of average number with abundance of milk and butter the year round—much more abundantly than two or three cows kept in the ordinary way would do. One may begin to cut a lot of this kind, particularly if it is well-set in orchard-grass, early in May. By the time he has gone over one-half of it for one cow, it will have grown sufficiently for him to begin again, and so he may keep on till

frost. In the meantime, the other half will have been cut at least twice, yielding two heavy crops of hay, which will furnish an ample supply of winter provender. If the manure from this cow is skilfully husbanded and applied, it will keep up the yield for an indefinite number of years, and leave a good deal for other purposes. There is, to my knowledge, a lot of this description in the town of Lincolnton in this State. It was sown full forty years ago, and has never once been disturbed by the plough from that day to the present. During this long period, it has been cut over several times every season, and has received only a moderate dressing of manure once in two or three years; yet, when I saw it in December last, though the clover had almost wholly disappeared, the orchard-grass, not yet killed by the frost, was lying on it in a rich, beautiful matting of latter-math that did one good to look at. Now, the soil of this lot, like all in and near the place, is light and sandy. To look at it, one would not suppose it would produce these grasses to any advantage at all; yet Mr. M., the owner, finds rough food from it during the summer, in great part, for two milch cows, two or more horses, besides some for hogs. I think the lot is not more than three-fourths of an acre.

It is in vain, therefore, for those kinds of men, who always see a lion in the way, to say that soiling is impracticable in this country; who scratch over a piece of ground two or three inches deep without cross-ploughing, sow it with half, or even a fourth of the proper quantity of seed, and then, when they find themselves disappointed in the yield, exclaim, "There! didn't we say so? didn't we tell you clover will not grow in this low, hot latitude? that it comes up thin as the hairs on the crown of an octogenarian? and then all dies out during the first or second summer?" In reply to this, we go back to the lot at Lincolnton, which is, after all, but an ordinary one among the many I have seen, and say, Well! Mr. Nerveless, you may be right; but if these grasses will grow so on that ground, which is naturally a poor, thin, sandy hill-side, we do not see why it would not do even better on stronger land, and particularly in the lower and damper grounds found on any little farm in the country! Pray, sir, try again. Plough your ground as it ought to be ploughed. Give it plenty of seed, not covering it so deep that it cannot germinate, and then give it a moderate top-dressing from the stable of your soiled cows every spring or autumn, and if you then fail, you may talk with some reason on your side. But until you have done this, pray do not try to check the progress of improvement by your ill-timed and groundless objections.

It is easy, therefore, to see how small a piece of ground, managed in the proper way, would suffice for the soiling of one cow. Besides, how easy to help the matter out, during the summer and autumn months, by superfluous or waste matter from the garden, of which there is always more or less, such as the thinnings of beets, carrots, parsnips, squashes, etc., etc.

II. But this is a practical age everywhere, and particularly so here in the South, where grim poverty has, for the present, taken up her dwelling. The first question with regard to anything in a business line is, no longer, will it please—but will it profit—will it pay?

The common objections to soiling are, that it requires, in the outset, too much outlay of labor and cash; and subsequently, too much time to very little, if any profit..

Let us examine these points.

I. As to outlay. I have allowed an acre and a-half to a single cow, which I am well satisfied is more than need be; but let it stay so for argument's sake. Now, what will be the expense of preparing this piece of ground? The ploughing, though somewhat extra-laborious, can all be done at leisure moments, as well as the harrowing, manuring, etc., by the means and appliances at hand. Land two or three years from the forest, and of ordinary fertility, with a very slight top-dressing of manure from the stables, or virgin soil and mould from the woods, mingled with a few bushels of wood-ashes, would be all that would be required to start with. After the first winter, the manure from the cow soiled alone will more than keep up the needful supply. Then how silly, how child-like, to talk about the expense! It is really enough to make an energetic man sick to hear this kind of stuff! Expense! Are you not rather fearing a painful tax upon your own idleness and want of will!

II. The idea of a needless expense of time is equally groundless. How much time will it require a man with a good sharp scythe, to cut grass enough every morning to feed his cow three times during the day? Not five minutes—not over three, if he has the least skill in the use of his instrument. Provided the lot joins the stable, as it ought to do, how much more time to feed the grass to the cow three times a day? Not five minutes more; but say five for cutting and five for feeding, and we have ten minutes expended each day. If you just leave the stable door open, the cow will go to water at will, and come back of her own accord.

Now, my friend, suppose instead of this you turn your cow out to wander where she will. If you put a bell on her, it will cost you

more in actual cash than preparing the lot for her feed, which need not cost you one cent in cash. Besides, the bell is very apt to be lost every year or so, and must be replaced with renewed expense. But to proceed: even with the bell on, it will often take you from a quarter to a full hour every evening to hunt her up and bring her home; without a bell, you will often hunt for hours and then, sometimes, not find her at all. This you will have to do yourself, or some one about the place capable of assisting in the work of it, and whose time is, perhaps, as valuable as your own or nearly so. Now, on which side of the question does the waste of time lie? But you send a little boy. Yes; but you must send a horse with him, and if he is old enough to ride a horse for miles around looking for the stray cow, his own labor, as well as that of the horse, would, in the meantime, be worth a good deal more than the ten minutes' work of a single hand necessary to keep her at home. But, enough.

Your cow, if found, comes up at night weary with the long day's hunt for food, poor, gaunt, and with a very slack udder. How much milk are you going to get from her? How much butter from the gallon of that poor, thin, blue, watery, creamless, bitter-tasted stuff? Do you ever think of this? Have you ever put yourself to the trouble of calculating the waste that is thus made, compared with the obvious advantages of keeping her up? The English have a saying, "If you feed your cow upon gold, she will pay you;" and like all sayings that have passed into a proverb, it abounds in truth. It asserts the fact which, in practice, will be found to be positive and unfailing, that the higher you feed and the richer you feed, till you feed in quality and quantity to actual repletion, the more butter and milk you will get. If, in this way, she pours out an over-supply, feed the surplus milk to the hogs, and send the surplus butter to market, which will command nearly double the price which is given for the white, lardy kind of stuff commonly found there.

But again: Have you ever considered the saving in fences you may make by this means? That your whole place need not have one cross fence upon it? That it may be all inclosed in one ring; and even the palings saved which, where cattle are suffered to run upon reaped fields, are necessary to the protection of the house-yard and shrubbery?

Keep your cow up; feed her as you do your horse, or even more freely, and she will make it good to you, while you will need to inclose nothing but the garden to keep out the fowls and rabbits. One mile of new fencing, all things included, cannot be put up for less

than one hundred dollars. Is there no saving—no advantage in avoiding that?

But above all, have you ever thought of the advantages of thus keeping your cow, or, if you have more than one, your cattle, off your cropping lands? Can you close your eyes to the unreasonableness of turning them on your fields to trample the producing life out of them, and rob them of all protection against the scorching rays of a Southern sun? Has not enough been said, in the course of these papers, to show the wisdom of leaving upon them the covering which kindly nature has provided for their sustenance and the recuperation of their yearly taxed and exhausted strength? Think over the matter carefully, and you cannot fail to see that in this respect alone you secure an advantage more than sufficient to counter-balance twice the expense of soiling any number of cows you may have.

It is obvious that much more might be said on the subject; but if the above leading thoughts are well-weighed, they will scarcely fail to satisfy any reasonable mind.

T. S. W. MOTT.

Reply to the Criticism of Mr. Mott on Dr. Atkinson's Essay on the Cultivation of Corn.

Mr. Editor,—I have just read, in your last number, the following friendly criticism of Mr. T. S. W. Mott on my article on the cultivation of corn, which appeared in the February number of the *Planter and Farmer*:

“The only objection to it,” says Mr. Mott, “that strikes me as particularly suggesting itself is, that it overlooks in toto what ought to be the prime object with every planter: The preservation, if not the *positive improvement* of his lands, in any crop he may see fit to grow upon them. If I mistake not, Mr. Atkinson has not a word to say on this most concerning subject. In thus giving it the go-by in speculation, he has done just what ninety-and-nine men in the hundred of our Southern planters and farmers do in practice; they plant to the best of their knowledge in such a way as to get the last mite they can from the poor, over-tasked land, without one moment's consideration of the question how it is to get a “quid pro quo” in return for its own generous bounty; how its strength and productiveness are to be kept up. This is the more unfortunate, inasmuch as this grain is, without a question, the great exhaustor of

our section. It always has been so, and always will be, until we can fall upon some method of raising it which shall, at least to some extent, counteract its ruinous effects. *That, it seems to me, were an easy matter*; though others might view the case in a widely different light.

“*At all events, the cultivation of corn will not answer in any system we may adopt for restoring our exhausted and abandoned lands.*”

Why not? I would ask, if, as Mr. Mott asserts, “it were an easy matter to fall upon some method of raising it which shall, at least to some extent, counteract its ruinous effects.”

As Mr. Mott sees so clearly how this may be effected, I think I may, in return for his kindness to me, justly find fault with him for omitting to give the much-coveted information. He should remember the old saw which has been in vogue ever since the days of Pope—

“Now learn, what every critic ought to *show*,
For 'tis but half a judge's task to *know*.”

As a full reply to the strictures of Mr. Mott, to which I assure him I take no exceptions, it may suffice for me to say that my object in preparing the essay to which he refers was confined to the single purpose of giving my experience in *corn-growing*—without reference to any other matter. Nor did I conceive that the cultivation of that important cereal (which Mr. M. thinks should be in the main dispensed with—in which idea I think he will find few Southerners to concur—), was in any manner connected *with the improvement*, but rather with the impoverishment of land; so that if I had turned aside from my subject to notice anything else, I would probably have endeavored to explain *HOW that impoverishment was effected*, leaving to Mr. Mott the more agreeable, as well as the far more important task of showing how one may cultivate a most exhausting crop, and, at the same time, make it contribute to the improvement of the land.

If that estimable gentleman, to whom the agricultural community is already indebted for his efforts in their behalf, will bless the world by furnishing them with a recipe which shall be found capable of producing this most desirable result, I think that it will be no difficult matter to insure him a monument such as never yet has been erected to any American citizen.

To show that the worthy critic is rather *hypercritical* in his allusion to my article, I will say that I did not altogether ignore “*the preservation of the lands*, for I strongly recommended *accurately*

constructed hill-side trenches and deep ploughing as well adapted to that end.

Regarding *the improvement of the soil* as altogether foreign to the design and character of the essay, I left that important matter to be discussed by wiser heads, never thinking, however, that one could be found competent to the task of showing the cultivation of "the most exhausting crop grown in our section to be entirely consistent with not only the preservation but *the improvement of the soil.*"

I anxiously await the August number of your Journal, to be enlightened on this interesting subject.

Unfortunately for my hopes, however, I may not expect this information from Mr. Mott, who, in one part of his communication, says, that "it were an easy matter," but farther on, and, as I suppose, on more mature reflection, asks, after speaking of the exhausting nature of the corn-crop, "Is it not, then, obviously the interest of the small farmer to cultivate less of this grain and *more of those kinds by which* he can improve his lands, *instead of impoverishing and ultimately wearing them out?*" This is an admission that the corn-crop is not one of a kind by the cultivation of which the land can be improved—and is therefore a giving up of the question.

I may, Mr. Editor, in some future communication, give my experience in renovating exhausted lands; but if I shall do so, it will be in no connection with suggestions as to the *most profitable cultivation of corn.*

I invite your correspondent to continue his strictures on my premium essay, and assure him that I will take them kindly, and that if I shall be satisfied of their justice, he will receive my thanks for his kindness in making them. I do not desire that it shall be valued above its true merit.

TH. P. ATKINSON.

Danville, Va., June 17, 1868.

Hints to Graziers.

A heifer or cow will make beef earlier than a steer. An old cow, or an old sheep, will not fatten nearly so well with hay as with grass. The longer the straw of any kind, the worse as fodder; short straw is said to be, invariably, the most nutritious. Cattle always prefer that which is fresh threshed, a day even making a difference.—*Lawrence upon Cattle.*

Another Letter from "Marlow."

Mr. Editor,—In my former paper, written while in Kentucky, I hastily made the following promise to your readers: "In my next, I will try to show wherein Virginia and North Carolina may be profited by imitating Kentucky husbandry, and wherein not. I will also try to present to your readers reasons why Virginia and North Carolina should cultivate grasses and raise stock, and will likewise mention the sorts of grasses best adapted to those districts and the kind of stock-raising and dealing that would seem most likely to yield the fairest profit."

The promise is too big. Even if I were competent to fulfil it, it would be too much for one paper. The only way I can at all venture to redeem the pledge, will be to take up the different items and give each a sort of a running commentary.

I. *Imitation of Kentucky husbandry by Virginia and North Carolina.*

The usual plan is to copy the bad and reject the good, agriculturally as well as morally. But the wise farmer will strive to do like the virtuous man—and the rule will then stand *vice versa*.

Kentucky, in my humble opinion, as an agricultural community, is vastly overrated. That they have fine crops and the best of stock, and that the farmers grow rich, is all true; but no land beneath the sun is more blessed than the "dark and bloody ground" of Daniel Boone. Climate and soil vie with each other. Unlike most limestone countries, drought does not destroy crops. The rock generally is so far below the surface that it seems to hold the percolations as a great cup, without the sun's absorbing power getting down deep enough to reach the water-level. But be this as it may, it is a fact that Kentucky is never a great sufferer from long dry seasons.

The soil is simply unsurpassed. It is deep and friable; and the combinations of elements are such that artificial means need never be resorted to to supply deficiencies. Grasses, grains, tobacco and hemp are grown with equal success. And the blue-grass seems to impart to the soil a self-rejuvenating power, so that you find in the better districts of Kentucky but few old and worn-out lands. Realty in Henry, Shelby and Bourbon counties sells from sixty to one hundred and twenty-five dollars per acre, and yet the good farmer makes a net income of 6 to 10 per cent. per annum; and that, too, with a system of cultivation very far inferior to the highest standards of agriculture.

My object is not to advertise the excellency of Kentucky lands—only to show how it is that the farmers succeed so well, while, at the same time, their husbandry is so imperfect. Nature has done the most—they the least.

The want of barns struck me as very remarkable for a country so distinguished for its stock. But their vast amount and prodigal disposition of food supplies the lack of shelter. Give hogs, cattle, mules and sheep plenty of corn and hay through the winter, and unless the winter is extraordinarily severe, the cold, rain or snow will do them but little harm. And hence the fine stock; but it is fine at the expense of vast prodigality. Of which more hereafter.

The barns are mere stables, with occasional shedding—and very rudely and imperfectly built. In the fields, where they thresh their grain, they pile up the straw on pens in such a way as to afford a partial protection to cattle and mules. But the sheep go uncared for, to weather the storms of winter as best they can.

The waste of manure is also peculiar to Kentucky. The word waste is, perhaps, not expressive. The fact is, the Kentucky farmer manages to have but little manure either to save or to waste. Only animal excrements are the manures to be found, and these to a very small extent, as the droppings are necessarily scattered over the fields where the stock roam winter and summer. That no manure is made by tramping over fodder, hay and straw, will appear from the mode of feeding.

The prodigality of Kentucky husbandry exceeds anything I ever saw. The land yields from fifty to seventy-five bushels of corn to the acre; and yet farmers will devote a field of twenty acres, capable of cribbing at least one thousand bushels, to their stock as they do a field of clover or blue-grass.

When the corn matures, they turn their cattle, mules and sheep into field number one, and after they have ruined the fodder, trampled down hundreds of bushels of corn and eaten the rest, they turn them into field number two; and thus they winter their stock. The only clever thing about it is, that they turn in their stock—hogs after the cattle, mules, &c., are removed from field number one, that they “may gather up the fragments that nothing be lost.” But the waste of fodder and the thousands of grains never found by hog or pig!

To appreciate this horrible wastefulness, let us see how a different and more economic plan would work. Let these animals be housed or shedded, and provided with mammoth troughs. Let the fodder be cut off at the ground, shucked, and the corn cribbed. Then put

your horses and hands, on a winter's day, to operating machinery—cutting the fodder and shucks into small half inch pieces, crushing your corn and cobs into chop; and three times a day fill your troughs with the cut fodder, covered thickly with your corn-chop, adding a little water to give it some adherence, and you will have a clean, delicious food, served up with agricultural gentility, and your cattle, happy and content, warm and well fed, will grow in fat and beauty as they grow in horns and hide.

Without attempting a calculation of the cost of labor and the investments in machinery on the one part, and the unnecessary waste of corn and fodder and manure on the other, it is only proper here to ask if any man can doubt that this latter plan would put into these farmers' pockets 100 per cent. above that which they derive by pursuing their system of prodigality?

The present plan gives Kentucky farmers no manure to perpetuate the soil or give it new life and strength. It wastes all the fodder and shucks without making any return to the soil. It requires vast quantities of corn to give internal heat to animals against the external cold of winter; and, moreover, as is always the case, the unbroken and unground corn goes through the stomach half-digested, and therefore half-appropriated to the accumulation of fat and muscle, and therefore half of it a total loss.

This mode of feeding may be modified in different localities; but it amounts to very near the same wastefulness. Sometimes the corn is cut off, shocked, and then hauled to a common feed-ground, and thrown down in piles or scattered, for cow, mule, sheep and hog. In any case, anywhere else than in a country where little labor accomplishes abundant harvests, such a system would eventuate only in the utter impoverishment of every farmer.

There should, therefore, be no imitation of Kentucky husbandry in matters of these sorts. A good barn and ample shedding will save many hundred bushels of corn and many tons of hay and fodder; besides, the yields of the soil will be largely returned to it again in concentrated manures from stalls and yards. And the better system of feeding, above referred to, to make better cattle at less than half the cost, and thereby enable a farmer, even on poor land, to improve his soil, and add to his profits more and more from year to year.

But there is a power in Kentucky husbandry after all, which, though the result almost of necessity, may yet be imitated by many other sections where this power does not emanate from the native character of the soil. The system of grass-growing and stock-rais-

ing, putting into the concentrated form of muscle and fat the productions of the land, has given Kentucky her agricultural glory, and filled the pockets of her rural population with riches and their homes with comforts. I will, therefore, devote a short space to

II. *Grass-growing and stock-raising in Virginia and North Carolina.*

I mean no harm to any of your readers in the more eastern portions of Virginia and the Carolinas; but I fear that when they abandon cotton, corn and tobacco for the grasses, they will rue it sadly. Every tree must have its own bark—you cannot gather figs from an olive, nor berries from a thistle. Nor can you make cotton profitable in Kentucky, nor the grasses in the light, loose and sandy loams of the Atlantic slopes. But towards the Blue Ridge, and of course beyond it, where the lands become tighter, firmer, the grasses can be made to grow with great success, and wherever grass will grow cattle will thrive, and the money will come *ex necessitate rei*.

Beyond the Ridge, the soil naturally produces blue-grass like Kentucky, and stock-raising comes of itself. But it is with reference to those tiers of counties east of the Ridge in Virginia and North Carolina, reaching eastward as far as the falls of the James in Virginia, and the Central railroad in North Carolina between Raleigh and Charlotte, where certain grasses can be made to grow with great success, that I would offer reasons for their introduction. There are three of these reasons that it may be well to mention :

1. The oft-repeated story of the uncertainty of our present labor system is the first that may be adduced. It is impossible to make anything out of the soil with a peasantry so utterly unreliable as the freedmen. It will ever be an unending series of trial and failure. And as to introducing improved implements—machinery, &c., it would be making failure still more sure. Fidelity and intelligence are prerequisites on the part of laborers for operating the improved implements of husbandry; and without these, your best machinery could not be operated with paying success. And as to the introduction of white labor—as long as the negroes have equal, and claim social equality with the working white classes, you can never induce either foreign or native white men to immigrate; and if you can, you cannot hold them. They shun the negro as they shun the devil, except that the former is the shunning of disgust, while the latter is that only of fear.

Grass-growing and stock-raising will require far less labor, and that may be more easily superintended and kept under the eye of the farmer than the growing exclusively of grains and tobacco.

2. The necessity of a change of employment and effort on the part of the agricultural community, points to grass-growing and stock-raising as the change best suited to the present condition of the agricultural mind of the South. Southern farmers are disgusted with their old pursuits. The labor system has undergone a radical change; and to continue their old routines of husbandry, with idle and vicious freedmen, is to drive them from their farms into trading-shops on street-corners, or into idleness, dissipation or melancholy. But let them begin a new agricultural life—start out afresh, with new plans, new efforts and new objects, and you will infuse into them a new strength which of itself will tend greatly to insure success. And there is nothing so fascinating to any man of agricultural habits as the grasses and stock; and especially would they wake up the enthusiasm of the prostrated Southern planter. He would rise to his feet a new man, and would find that, after all, it is indeed a “bad wind that blows no good”—that out of his very ruin, sphinx-like, his fortune may yet spring, more substantial and comfort-giving than ever before.

3. The third reason for the proposed change is, that it would redound greatly to the pecuniary interest of the farmer.

He may raise different kinds of stock at the same time and on the same farm. Suppose, for example, he would unite with four or five neighbors in the dairy business; for, let it be remembered that the watchword of modern progress and success is organization—association—union of labor and capital. Suppose he feeds 50 cows, this will give him offal enough for 25 hogs. Then, if he will graze with his cattle 100 sheep, he will afford the sheep protection to a good degree against dogs, will support his sheep on the very things which his cattle and hogs cannot eat, and keep his pastures and meadows free from briars and weeds and noxious plants. Here are wheels working within wheels—each helping the other—and the whole grinding out money to replenish the farmer’s pocket. A farm of 300 acres, well set in grass, with portions for grain, all scientifically and energetically cultivated and kept, will support the amount of stock enumerated.

Let us make a rough estimate as to the yields one year :

Shearing 100 sheep twice, average of $4\frac{1}{2}$ pounds washed,			
450 pounds wool, at 30 cents,	-	-	135 00
Increase of lambs (50), at \$1 50,	-	-	75 00
			<hr/>
Amount carried forward,	-	-	210 00

Amount brought forward,	-	-	-	210	00
50 good cows, well-cared for, will make easily 1000 pounds cheese, at 14 cents,	-	-	-	-	1400
Increase of 25 calves, allowing half the cows only access to the bull every year,	-	-	-	-	75
25 porkers, say 5000 pounds,	-	-	-	-	500
					2185
					00

I allow in this for three brood-sows and their increase.

From the above estimate I make no deduction, as the very low figures employed to make it would enable the farmer to support himself, to pay farm expenses, taxes, &c., out of blooded stock he may raise among these numbers and the horse and mule colts which he may also bring into market.

The Kentucky farmer more than supports himself and pays expenses by raising full-blood stock and selling them at high figures: As I said in my former letter, it is a small thing there to pay one hundred dollars for a full-bred Cotswold or Southdown ram or a Durham or Devon calf.

Now, can there be a farmer anywhere found in the districts of Virginia and North Carolina, for whose benefit I am writing, that realizes a net profit of \$2,000 on a farm of 300 acres? And yet this result can be attained, and easily attained. But it requires time, tact, prudence, forecast and *enthusiasm*; with some, extra "change" to begin with. But *with these*, success is certain.

And in addition to the amount of money to be made out of the grasses, let it not be forgotten that when judiciously fed, the manures made therefrom will increase *in perpetuo* the fertility of the soil, and give you, at your own door, the guanos which now are taxing all your resources in order to raise tobacco and grain.

In 1865, I "fell in" with a gentleman and his wife returning from Georgia to Virginia. He had been a large sheep-raiser in Culpeper. The armies slaughtered his sheep and drove him, with his negroes, South. He tried cotton-planting—became utterly disgusted with the whole business, the mode of life of the cotton-planter, and determined to return to his old pursuits in Virginia. He told me that, to say nothing of the pleasure, comfort and refined mode of life which belonged to the sheep-raiser, when compared with the turmoil, endless drudgery and coarseness of planting-life, the profits from his flocks were much greater than those from his cotton-fields.

III. *The grasses best adapted to the districts above named in Virginia and North Carolina* must not be overlooked.

Blue-grass will not grow east of the Blue Ridge "to do any good." It will prove a waste of time and money to try it. The soil and climate are both adverse.

Clover will grow with a good degree of success for both pasture and hay, if lime or plaster can be applied; and, in some sections, it may do very well without the application of either. But wherever it can be made to grow there, it should be sown. It is the king of the grasses. As a green fertilizer, it is without a rival; and for stock of all kinds, it has more substance and is more palatable than any other grass grown. The common red clover for the up-lands and the Alsike or Swedish clover for the low wet lands. One reason that clover does not succeed with us is, that we do not put it in with sufficient care. There are but three ways to put it in with success—by sowing it on the snow or just after a hard rain, or by covering it with brush, harrow or roller. We cannot always prognosticate the weather, and therefore cannot rely on the coming rain. And the snow may melt before we get our seed, and then the best way is to drag a harrow through the wheat or rye or drive a huge cast iron roller over the field. Either plan will cover the clover sufficient for germination, and at the same time will improve the rye or wheat.

But the grasses eminently suited to the districts in question are the herds and orchard-grass. The former is best for meadows, and to afford a small intermixture with the orchard-grass for pasture. The orchard-grass affords a noble pasture; and it will grow east of the Ridge as well as west of it. It comes early and continues late; and if covered with snow in the early winter, it will afford good pasture the year round without the blight of a blade.

They both should be sown after wheat, rye or oats, in the autumn, and harrowed, brushed or rolled in at once. And for pasture, no one grass should be sown alone; but clover and herdsgrass should be mixed in with the orchard—the latter, however, largely predominating. This will afford you a pasture for Virginia and North Carolina equal to the best in Texas, and almost equal to the blue-grass fields of Kentucky.

The orchard-grass shoots up its heads of seed far above the tuft and blades, and even that of the herdsgrass-tops, and of course the clover, so that the cradle may reap the seed without molesting the solid, thick-matted grass beneath.

In regard to the last clause of my promise, I have only to say that the kind of stock-raising and dealing best suited to our farmers will necessarily depend on different circumstances and localities. I

have already referred, in the body of this letter, to such stock-raising as would likely succeed in most places; but at some subsequent time I may address myself to the comparative claims upon Virginia and North Carolina farmers of the various kinds of stock-husbandry in the United States.

MARLOW.

Wharne Cliffe, N. C., June, 1868.

A Mistake Worth Knowing.

Mr. Editor,—To my mind one of the great wants of the farming interest of our country is *such a practical knowledge of the principles of chemistry* as to understand the properties of our soils—what they possess, and what they need to make them productive; and also the properties of the different fertilizers—what effect they will have upon the soil; *and, more especially, the effect they will have upon each other, when more than one kind of fertilizing matter is applied at the same time.*

Ignorance upon this last point led the writer to make the following *mistake*: Feeling satisfied that *lime* is a valuable article in agricultural improvement, he had received the impression that it was safe to use it, *mixed* with any kind of manure. Hence, having a lot on hand, he mixed some of it with chip manure. Well, he supposes that was right; but when the chip manure was exhausted, he also mixed the lime with a lot of *stable* manure, expecting to have a fine compost for wheat the approaching fall. But while the compost heap was lying in his stable-yard, it was his good fortune to get hold of a choice work on agriculture, written by Prof. Campbell, of Washington College, Va., in which he learned that *lime* had the direct effect of expelling *ammonia* from the manure, and thus neutralize its effect upon the soil.

In conversation with a neighbor, who is an intelligent farmer on James river, I also learned that he bought two tons of guano, which he applied to his wheat-crop; but before sowing the wheat, to prevent smut, he *limed* it, and the consequence was, he destroyed nearly all the effect of the guano. And why? Because the lime expelled the *ammonia* from the guano.

The farmer referred to was anticipating good results from his guano until, just before harvest, when he walked through his wheat-crop, and, to his utter astonishment, he could see but little effect of the guano, except at one small corner of his field. And when he in-

quired of the man who sowed it, he learned that the lime being exhausted, that small corner of the wheat-field was sown without it; and there the guano produced its desired effect.*

I fear that your interesting correspondent from Granville county, N. C., who bought three tons of Pacific guano last fall, made a great mistake in applying lime to his wheat before sowing.

It was the reading of his very interesting article of December 12th, 1867, that prompted the present caution on the subject of using lime in connection with any animal manure.

I will now proceed to give a few extracts from Prof. Campbell on this subject:

“Rub a little sal-ammoniac and fresh lime together, and you may at once perceive the odor of the escaping ammonia. Ammonia is one of the most valuable ingredients in all animal manures, and every precaution should be taken to prevent its escape. Hence, fresh lime *should never be mixed* with animal manures, because it sets the ammonia free.”

“Rub a little of the guano with a few grains of freshly-slacked lime, and if a strong odor of ammonia is not given off, the quality is not good.”

Again, this same author, speaking of lime, says:

“Its effects upon manures containing ammonia make it unsuitable to be mixed with such manures, or even to be applied near the same time.”

The object of the writer is not to discourage the farmer in the *use of lime*, but simply to guard him against the *improper use of it*.

A. B.

Dagger's Springs, Va.

* We think the failure of the limed wheat is more likely to have occurred from soaking the wheat, then liming and retaining it too long in bulk before it was sown, whereby the germinating property of the grain was injured, than that the operation of so small a quantity of lime in expelling the ammonia from the guano could have caused the failure reported by our correspondent.—
ED. SO. PLANTER AND FARMER.

“Sense shines with the greatest lustre when set in humanity.”

“Speak well of your friends; of your enemy say nothing.”

“If the counsel be good, no matter who gave it.”

“Meddle not with that which concerns you not.”

“Bear your misfortunes with fortitude.”

Fredericksburg and its Surroundings—The Rappahannock Valley.

[Continued from page 366.]

Access to Market.

The Rappahannock river gives us water-carriage to the markets of the world. In former times, corn could be shipped to Boston, ten cents per bushel covering all the costs thereof. Considerably less than 100 miles from the Chesapeake bay—thence 30 miles to the Capes of Virginia—opens up to our choice the markets of our land, the West Indies, or the more distant marts of the world. Two first-class steamers ply regularly between Fredericksburg and Baltimore—sailing craft flaunt their sails at our wharves; or, if we prefer, the railroad bears off the produce of the country.

The Fisheries, &c.

The waters of the Rappahannock and Potomac abound in fish of fine size and superior flavor. The fisheries open early in the Spring, and furnish large supplies of rock, shad, herring, perch, &c., &c., which are shipped largely to distant marts. The sturgeon of the Rappahannock is noted as superior to that of any other quarter of the world. The sheephead of the same river, and terrapins, are epicurean dishes. The Potomac also affords a very superior bass, this variety of fish having been brought to Cumberland, Md., and placed in the Potomac a few years prior to the war. Last year was their first appearance as low down the Potomac as the mouth of Aquia Creek. The oysters of the lower Rappahannock are unsurpassed for size and richness of flavor. Both rivers are visited largely by the several varieties of duck (among which may be named the canvass-back), geese, sora, &c.

Mining Lands.

There are gold-bearing localities in Virginia, which, if not equal to those of California at present, are destined to be of great importance in years to come. Gold ore (the quartz rock) and surface washings are important features in this immediate section. There are not less than seven gold mines in operation—some of them very successfully—within an area of fifteen miles of Fredericksburg. Astonishing developments have recently been made in iron ore in this county at points where none was supposed to exist. Unmistakable evidences of this ore are apparent in many parts of the surrounding country. Lead is found in the State, but none in this immediate vicinity. Veins of rich copper are found in counties adjacent.

Tungston, tellerium and titanium are metals occupying the attention of manufacturers of iron and steel. We are told by scientific men that these all are found in Virginia—the last in considerable quantities in the Piedmont section. The time will surely come when enterprise will open up these rich stores of valuable metal lying as dead capital beneath the hills and mountains of our favored State.

Timber.

The timber of the Rappahannock Valley is a mine of wealth. Large quantities for shipping, building, &c., were cut, sawed and shipped a few years before the war, but large forests of primeval growth may yet be found. The following are the leading varieties: Oak, hickory, locust, walnut, poplar, cedar, pine and chestnut. Saw mills have been worked with great profit, as most of this timber lies adjacent to the river, or tributaries thereof, and along lines of artificial improvement. Except where destroyed by the armies, there are no farms without a sufficiency of timber for fuel and building purposes.

Fruits.

There has been little attention bestowed upon the growth of choice fruits, notwithstanding climate and soil are both so propitious for the development of this rapidly increasing source of wealth. There is not, probably, an orchard in this whole vicinity planted and attended for the purpose of supplying the demand either at home or abroad. That which is offered is the surplus, and comes not from well-directed effort, but almost as nature sends it. Grafting and improving fruits is the exception. Among the varieties of fruits particularly adapted to the Valley of the Rappahannock, may be named the apple, pear, peach, quince, grape, fig, plumb and apricot. Melons and berries of every variety and in full perfection. The strawberry grows in its highest perfection in this section of Virginia. There are no vineyards in the lower Valley, but the graperies of those who cultivate this delicious fruit give the strongest evidence of the adaptation of this country for that purpose. Large vineyards are being planted in the upper Rappahannock country with the most encouraging prospects. Indeed, they cannot fail to be eminently successful with a soil and climate like ours, in which graperies planted twenty years ago appear now just in their prime—the fruit increasing in quantity and improving in quality from year to year. Maturing in August and September, they furnish fruit for the Northern market several weeks in advance of that grown there.

All the varieties of the berry are prolific, and it may not be amiss

to say that a farm was recently purchased along the river, at a cost of \$15,000, which is to be devoted exclusively to the production of the blackberry.

ACQUIRED RESOURCES.

Among these we would embrace—

1. Our internal improvements.
2. The water-power, capacity, &c.
3. Manufacturing establishments.
4. Value of their products.
5. Business pursuits of our people.

Internal Improvements, &c.

The facilities for acquiring trade, and of forwarding merchandise to the larger emporiums of traffic, are, substantially, these :

A semi-weekly line of the finest steamers that leave Baltimore ply between that city and Fredericksburg, via the Chesapeake bay and Rappahannock river.

A regular line of steamers from Baltimore, which touch at Aquia Creek (on the Potomac, distant 14 miles), taking off such produce as may be sent thither by rail from Fredericksburg.

A line direct to New York from Aquia Creek, for the benefit of the Fredericksburg trade, is proposed.

A canal running up the Rappahannock river, a distance of 53 miles, which is out of repair, and not in use at this time; and several feeders thereto, from the Rapidan and Hazle rivers, which are also out of repair and use.

A plankroad to Orange Courthouse, a distance of 40 miles, and another leading to Germanna, in Orange county, a feeder of the first named. Both of these, by reason of the vicissitudes of the war, are in bad condition.

The Richmond, Fredericksburg and Potomac railroad, from Aquia Creek (on the Potomac) to Richmond, passes directly through our town, and is one of the best roads in the United States.

The Fredericksburg and Gordonsville railroad (as it is known) has been graded a considerable distance from our city, and \$272,105 expended upon it. Capital is required to complete this link, which will afford a shorter distance to Tide-water for all the products of the West and Southwest, than any other line in progress. It will form the connecting link, and be an outlet for the great Chesapeake and Ohio railroad. By this line increased facilities will be afforded our manufacturers to buy iron and coal cheap from the great depo-

sits in the mountains of Virginia. This road will form a direct line from the South and Southwest to all Northern cities; connecting at Acquia Creek, by a ferry-boat, with the Baltimore and Potomac railroad. The interest of the State in this road (\$163,229), and of the corporation of Fredericksburg (\$85,000), may be had by parties who will simply guarantee its completion. By legislative enactment, Charlottesville has been made its terminus, the capital stock increased to \$1,000,000, with power to borrow money at a rate of interest not exceeding ten per cent. Capitalists will do well to examine.

The Water-Power—Capacity, &c.

We regard this as an element of power destined to add wealth, population and industrial enterprises; as our winters are short, our water-fountains pure, and our climate propitious.

Just above our city (and only the year previous to the war), a most substantial and durable dam was built across the Rappahannock river, embracing all of its power. Mr. John Chase, of Holyoke, Mass., the celebrated constructor of dams, was the architect. The material facts of this power are appended:

Length of dam, 900 feet.

Height, 18 feet.

Fall, 48 feet 2 inches.

Force of power, 4,000 horse.

Applied power, 400 horse.

Unapplied power, 3,600 horse.

A canal leading from the dam makes a circuit around the outskirts of our city, and along almost its entire length. The country affords as desirable sites for mills and factories as are to be found anywhere in the world. The company owning will sell, or lease power upon very reasonable terms, and offer great inducements to manufacturers. Lots suitable for mill or manufacturing sites can be purchased at from \$500 to \$2,000 each. The water-power here is said to equal that of Lowell, Mass.

The counties adjacent to our city have numbers of small streams running through them, which afford power of from 10 to 60 horse.

Manufacturing Establishments.

The Washington Company's woollen factory (Kelly, Tackett & Ford) has already attained a well-deserved reputation in the South, North and great West, for the superior quality of their goods, among which may be named cloths, cassimeres, kerseys and blankets.

They expect soon to have on the market a quality of black broad-cloth that will vie with that of Simoni. They employ a large working force.

We have two cotton factories, largely engaged in the manufacture of cotton yarns, oznaburgs, &c.

There are two foundries in operation. That of the Messrs. Hunter is engaged in the manufacture of stoves, agricultural implements, hollow ware, &c., &c. That of Scott & Bowering combines a large machine-shop, where is manufactured all kinds of water and steam machinery, engines, &c., and also agricultural implements.

There are three merchant mills for the manufacture of flour (and for grinding corn-meal). The shipments the last twelve months have been feeble, owing to the small wheat production, consequent upon the uncertainty of labor and inability to purchase seed. These mills are capable of grinding 500,000 bushels of grain per annum. Two other mills will be in readiness for the next wheat-crop.

Two sumac mills. It was here that the first mill in this country for grinding sumac was built and successfully operated by our energetic townsman, Mr. John G. Hurkamp.

A paper mill will soon be in operation, making news and book paper.

We have also two tanneries; a planing mill for the manufacture of sash, blinds, &c.; two carriage and wagon manufactories, &c., &c.

Value of Home Productions.

The amount of manufactures sold for home consumption during the year 1867 is estimated at \$150,000. Amount sold to other markets, \$500,000. Articles manufactured in our midst will, in the future, find more ready sale among our citizens, as they are every day being more convinced of the fact, that, in order to make our community populous and wealthy, they must manufacture and buy at home.

Other Business Pursuits.

The business of the city supports one bank (and requires half a dozen times its capital stock); two banking-houses; eight dry goods stores; thirty-three grocery and commission-houses; two hardware stores; two stove and tin-shops; three furniture-dealers; one crockery and china-house; three feed stores; seven bakeries and confection stores; three bookstores; two tobacconists and cigar-dealers; three drug stores; seven boot, shoe and clothing stores; two merchant tailors; three saddle and harness manufactories; several agri-

cultural implement houses; seven blacksmith's shops; one brewery; two distilleries; three newspapers; several cabinet-shops; two gun and locksmiths; two jewellers; a large number of boot and shoe-shops; one soap factory; five churches; two female seminaries; two male academies; twenty primary schools; one large hotel, the 'Exchange,' and several small sized well-kept public houses; half a dozen or more boarding-houses; three lumber-yards; two brick-yards; coal and wood-yard; four land-agencies, &c., &c.

Amount of goods sold in 1867, estimated at \$1,250,000.

FINALE.

The former comfort, if not opulence, of our people, is a fact which speaks strongly of the great natural advantages and resources of this region of Virginia. It is left to the activity and energy of the present day to develop, in a still higher degree, the power, wealth and grandeur that is within the grasp of well-directed enterprise.

The stranger may well ask, in view of the advantages we have portrayed, why are these lands so cheap, and why is not so capacious a water-power employed? The answer is plain: "There is not a tenth of the labor here that is needed to develop our resources, and not capital to employ profitably the labor we have. The necessary consequence is, a vast surplus of fine land put in market at a mere fraction of its real value, while priceless minerals lie dormant in the earth, and a water-power equal to millions of hands flows unheeded to the sea, for want of the capital to turn them to account."

No part of the United States offers greater inducements to miners, farmers, speculators, business men—those looking for quiet homes, or those desirous of engaging in the great battle of life—than the beautiful country and fertile lands around Fredericksburg in the county of Spotsylvania, Virginia. These lands were dependent upon slave labor for their cultivation. Their owners having lost, in most cases, all but their lands, have not the means to work them, and are compelled to sell all or a part. Our people offer every encouragement, and the lands every inducement for immigration from all quarters. Those who come now will reap the pioneer's advantages without the pioneer's usual vicissitudes. Come, then, imbued with the proper spirit.

"A man is valued as he makes himself valuable."

"Gamesters and racers never last long."

Immigration—Colonization.

Mr. Editor,—It is gratifying to find this subject assuming a practical form. Since the issue of your June number, the people of several counties of the Southside have appointed delegates to a Convention to be held at Burkeville on the 8th of July. The cardinal point to be kept in view is to secure uniform, harmonious coöperative action by the several counties interested. My decided opinion is, and I am sustained in it by some of the most practical men in the State, that the system of county land companies, suggested in my last, is the best plan yet presented to secure speedy and certain success. These county companies will, of course, have the confidence of the people, as they will be home institutions, managed by the neighbors and friends of the land-owners. They can procure large subscriptions of lands to their stock where alien and unknown companies would fail to get an acre. The only objection to these local companies, urged with any force, is that they are too feeble to accomplish much in the way of inducing immigration from abroad, which is an expensive operation. This difficulty I propose to meet by a confederation or combination of all these county companies for the conduct of their general business abroad, under the supervision of a general Board, to consist of one member, say the President, from each county company, to meet quarterly, or oftener if necessary. Suppose ten county companies are formed, with a land subscription to each of 20,000 acres—at, say \$5 an acre. This will give a combined capital of 200,000 acres of land worth one million of dollars. If all these companies have similar charters, it is a very simple thing to combine or confederate them, and they will at once possess the means and strength of a powerful corporation, capable of grappling with all the difficulties of the subject and of commanding success by the united power of all, when any one singly would fail. It is simply proposed in this business to apply the great principle of *combination*, which has achieved such wonderful results in this century.

One of the most striking differences between the people of the North and those of the South in this country is in their mode of undertaking almost any enterprise. Those of the North combine, form companies, and thus concentrate large capital with energetic management, and accomplish the most stupendous results in all departments of business. On the other hand, the rule in the South has been to act individually and separately, and of course with less capital and fewer of the elements of success in any given undertaking. With the loss of individual fortunes that has occurred in the

South has sprung up a necessity that we shall adopt the Northern plan, and attain ends by combination that are now beyond the reach of individual means. And in no undertaking is this more important than in the great work of populating our country from abroad.

If any man of ordinary business capacity was to-day the owner of 100,000 acres of Virginia farming lands of average quality, in bodies of 10,000 or 20,000 acres, in any of the counties of the Southside, he could form a partnership with capitalists by which he could, in six months, settle 1,000 families on his domain at a reasonable price for his lands. One hundred men owning 1,000 acres each can do the same thing, if they will combine and extinguish individual titles and suppress individual differences of opinion, by concentrating all their titles and merging their conflicting views in the hands of a company. This is what I propose, and shall urge upon my fellow-citizens at the Burkeville convention. The details can all be readily arranged, and success, in my judgment, is absolutely certain.

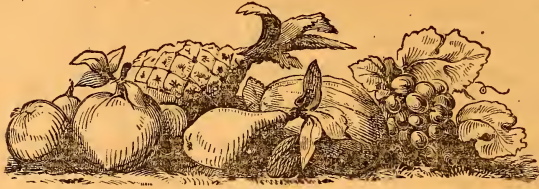
J. D. IMBODEN,

Domestic State Agent of Immigration.

Steam as Applied to Agriculture.

Rapid progress is being made in the production of a practicable steam-plough, and of a tractile engine for common roads. Inventors have, for many years, been engaged in patient experiment on these subjects. The latest information relates to a machine that has been constructed for the building of common roads, and is, at the same time, designed to perform both of the offices referred to. This machine is called a "Self-Track-Laying Car," and was invented by Jesse S. Lake, of Atlantic county, N. J. It consists of a truck sufficiently substantial to support an engine and boiler of ten-horse power, which supply all the motive force. Over and around the wheels of the truck passes, on each side, an endless chain or band of flat bars of wood, so connected and adjusted that, as the car moves forward, this band is laid upon the ground in front of the truck-wheels and picked up as soon as the wheels have passed over it, thus supplying a uniformly solid and compact track for the machine. This enables it to travel over the roughest or softest ground with a reliable footing.

To this car are first attached a gang of ploughs with which to break up the ground, on which, when fully prepared, it hauls and distributes loads of gravel. Its usual amount of work is to start and pull four to eight two-horse ploughs, according to the nature of the soil, which it easily accomplishes. In hauling gravel, it will pull from twenty-five tons over soft-ploughed fields to fifty tons over a level highway, drawing a train of the same kind of cars or trucks, but without the engine on them. It runs eight miles per hour easily on level ground, with twenty pounds pressure of steam, and could easily attain fifteen miles at full pressure.—*Richmond Whig*.



Horticultural Department.

The Virginia Horticultural and Pomological Society.

An adjourned meeting of the Executive Committee of this Society was held on Monday evening, June the 15th, at their rooms in the Purcell Building.

After the usual routine of business, the Committee adjourned, and a meeting of the Society was then held, that all present might hear the following interesting and instructive essay from the pen of the President, Col. Wm. Gilham :

THE CULTURE AND GENERAL MANAGEMENT OF THE STRAWBERRY AS A MARKET FRUIT.

The almost universal adaptability of the soils of Virginia to the growth of the strawberry; the ease and certainty with which annual crops of good fruit may be produced; the short interval between the time of planting and that for securing a remunerative crop; the readiness with which strawberry plantations may be enlarged; the facility with which the berries may be shipped to distant markets, and above all, the early ripening of the fruit, by which our growers are secured a ready sale in the Northern markets at high prices, point to this as one of, if not the most important of our market fruits.

The cultivated strawberry of the present day is undeniably a most delicious fruit, and coming, as it does, as the "first fruits" of the year, it is in demand by all classes of our people. For many years, the production of this fruit in the vicinity of almost all of the cities and large towns of the country, and on the railroads and navigable streams leading thereto, has been steadily increasing, and yet the demand, particularly for fine fruit, has increased with the production. This ever-growing demand has given rise to great improvements in the varieties cultivated, in the modes of culture, and

in the appliances for shipping the berries to distant markets; and such an amount of practical information in relation to this fruit has been acquired, and quite freely disseminated, that no one, who designs engaging in its cultivation for market purposes, need go astray.

For a number of years before the war, the leading "truck" farmers around Norfolk had been cultivating the strawberry for shipment to the Northern markets; and in 1860, I believe, Mr. Franklin Davis commenced growing them, on the James river in Surry, with the same view. The war, of course, put a summary check to this rapidly-growing trade, but since its close, numerous parties, encouraged by previous success or that of others, have gone into strawberry culture on a large scale at various points on the James river; and around Richmond several parties are making arrangements to grow them on an equally extensive scale, with the full assurance that, if the demand for this fruit, and consequently its price, does not keep up in this market, a certain market with high prices will always be found at the North. The strawberry trade is already an extensive one on the lower James; and there can be no reasonable doubt of its extending to numerous other sections of the State accessible from the Northern cities by water or rail. It should be the duty of the Horticultural and Pomological Society to disseminate reliable information on all points pertaining to this important branch of pomology.

The Soil and its Preparation.

There is no other fruit which, taken as a whole, seems to adapt itself with so much ease to almost every variety of soil as the strawberry. Large crops may be grown upon light sandy lands, or stiff clays, or upon every intermediate grade of soil; but in every case in which the grower desires large crops of fine fruit, it must be naturally fertile, or made so by judicious manuring. The most careful attention, too, must be given to its preparation and after-cultivation, it being the universal experience of growers that nothing in the soil, be it ever so rich or well-adapted to the growth of this fruit, can atone for slovenly preparation and careless cultivation.

A deep well-drained soil, whether light or heavy, is necessary to the successful cultivation of the strawberry. In selecting a location for a strawberry plantation, care should be taken to select one naturally well-drained, otherwise, artificial draining must be resorted to and a heavy outlay incurred.

The practice of all of our large growers is to plough deep, and afterwards by harrowing, and if necessary, cross-ploughing, to get the land in the proper condition for planting. All authorities on the cultivation of this fruit recommend the use of the sub-soil plough. But few, if any of our cultivators are in the habit of sub-soiling. On the light soils about Norfolk, and on the lower James, sub-soiling may be of doubtful utility; but on soils that are at all stiff, or are underlaid by a stiff sub-soil, I would unhesitatingly recommend the use of the sub-soil plough, as the only means of securing a remunerating crop in all seasons.

Too much care cannot be bestowed on the soil in its preparation before planting. Mr. A. S. Fuller, than whom there is no better authority on the cultivation of the strawberry, says, "I do not believe that there is one acre of strawberries in a thousand, cultivated in this country, that yields over one-half that it would if the ground was properly prepared before planting."

Manures.

As I have before remarked, to grow large crops of fine fruit the land must be rich. There are comparatively few soils in Virginia, particularly in that portion of the State likely to become the strawberry-producing region, on which the crop would not be largely increased by the judicious use of manures. Well-decomposed farm-yard manure "is scarcely to be excelled for the strawberry." But many cultivators, particularly extensive ones distant from cities, cannot command sufficient supplies of this article, and must resort to the use of such substitutes as may be at hand, or apply the concentrated fertilizers. Where swamp muck can be had, the use of this, composted with stable manure, &c., may be recommended as a certain means of improving the crop; but, I would recommend composts with caution, believing them to be very expensive in their application. Some of our most successful cultivators recommend the use of the superphosphates very strongly; I would recommend the use of such as contain from two to four per cent. of ammonia. The analysis of the strawberry shows its ash to contain large proportions of potash and soda; hence, fertilizers containing the salts of potash and soda, applied in connection with stable manure, or an ammoniated superphosphate, cannot fail to produce satisfactory results. Ashes, both leached and unleached, are also valuable; unleached ashes must, of course, be used with caution, from ten to twenty bushels per acre being a sufficient application.

Plants and their Propagation.

All plants sold by nurserymen and fruit-growers are runners from old ones. In selecting plants, great care should be taken to get them young—runners of the previous year—it being well-known that a small *young* plant will, in the end, prove more satisfactory than an old one, be it ever so large. Assuming that the cultivator has selected such varieties as are suited to his purpose, he will, after the first year, grow his own plants. For this purpose, he should permit a small portion of his plantation to make runners at will, and remove them at the proper season for planting.

When plants have to be shipped from a distance, or are likely to remain out of the ground for a number of days, it is important that they should be purchased in the early spring or late in the fall—either before warm weather sets in or after it is over—otherwise, no matter what precautions may be taken in packing, the plants will heat, and many of them perish. In this connection, I cannot too strongly recommend the purchase of plants as near home as possible, even at higher prices than Northern plants can be had for. The plants will, in general, be superior and the risk of loss far less.

Varieties to Plant.

No one at all conversant with the cultivation of the strawberry will require any argument to convince him of the necessity for care in the selection of varieties, particularly when the fruit is grown for market purposes. The cultivator who grows this fruit for a local market; who, every morning, disposes of that gathered on the previous day, need not concern himself about its keeping qualities, or be grieved to learn that his berries, after twenty-four or forty-eight hours' keeping, although still sound, will no longer present that peculiar rich color so attractive in the strawberry, and be, in consequence, unsaleable. He may therefore profitably grow many varieties that the producer for a distant market cannot. To both classes of growers, productiveness is of the first consequence; after that, good size, rich color and fine flavor; but for the shipper to a distant market must be added keeping qualities, and the necessary firmness to withstand the jolting of cars and the rough hauling of express employés.

To all who are about to commence the cultivation of the strawberry on an extensive scale, I would say, buy largely at first of such varieties only as they, or other cultivators in their immediate vicinity, have thoroughly tested, without reference to what may be said

for or against them by distant strawberry-growers, or by interested parties. I would also recommend each grower to cultivate small beds of such varieties as promise well, in precisely the same way that he manages his larger plantings. After having, in this way, thoroughly tested their merits, he will be in a condition to make proper selections.

Of all the varieties that have yet been produced, the *Wilson's Albany* seems to be the most desirable for general cultivation; it is one of the most productive known, is of good size, firm, keeps well, and bears transportation better perhaps than any other strawberry whatever. This variety is remarkable for its uniform productiveness and good quality in both light and stiff soils. The plants are said, by some, to fail after the first year's crop; but in our climate, at least, this is a mistake, as some of our cultivators have beds six and eight years old, which are still productive. Any one who is in doubt as to what variety to plant, may select the *Wilson* with the certainty of satisfactory results.

The *Agriculturist* is a very large berry of fine flavor, but so far has not, on our soils, proved itself so productive as the *Wilson*; neither, as a fruit for shipping, is it so satisfactory. It is one of our best varieties, however, and will be found very desirable for the home market.

The *Russell's Prolific* is a very large berry of rich color, fine flavor and very productive, and has so far succeeded remarkably well in this section. It is later than the *Wilson*, and has not yet, to my knowledge, been thoroughly tested as a fruit for shipping. If, on trial, it is found to bear transportation well, and is not too late in ripening, it will prove a powerful rival to the *Wilson*.

Whether a good shipping berry or not, it is destined to be a popular and profitable variety for cultivation for our home markets.

McAvoy's Superior is a very productive variety with us, but too soft for shipping. This is probably the most popular strawberry brought to our market, and, judging from the samples of vines in fruit, exhibited by Mr. Stansbury, I should say would be quite as productive and profitable as most of the other leading varieties.

The *Triomphe de Gand* is another very superior variety in our climate. Under ordinary cultivation, it is not so productive as a number of others; but when carefully grown on rich land, it is productive, and one of the finest strawberries grown.

Did space and time allow, I might mention numerous other varieties; so far as I know, but few of them have been tried with us, and none of them to the extent necessary for the formation of a

correct judgment as to their merits. But to extend the list above given is unnecessary; in it the cultivator will find everything necessary to make success certain.

Time to Plant.

The strawberry is usually transplanted in the spring or fall: Unless there is something special in the case, such as the prospect of being pressed for time, &c., the spring seems to be the more desirable season of the two. Plantations made then make a vigorous start at once, and, if properly cultivated, will bear a full crop the following season. The plants should be set during the month of May if possible, and not later than the month of April; otherwise, the risk of loss becomes very great, particularly in cases where they have to be brought from a distance.

Fall-planting at the North is usually done in the months of August and September; in our climate, it would not be safe to undertake it before the last of September—the season extending from that time until late in November. Plants set in the fall will bear a few berries the following spring, but the number will almost always be found to be too small to make them an object. It sometimes happens that plants set out in the spring bloom and bear a partial crop. This checks the growth of the vines and is otherwise very injurious; I would therefore recommend the stripping off of any fruit-stalks that make their appearance.

Preparation of the Plants.

When the plants are taken up, the dead leaves should be removed, leaving only those that appear fresh and green. Some cultivators clip off all the large leaves when their plants have been kept out of the ground long, or when there is a prospect of warm dry weather before the roots have time to start.

It is recommended by very high authority on strawberry culture, to clip off the roots when long at least one-half. This operation makes that of planting easier, and gives rise to a new set of fibrous roots from the cut ends. But when many thousands of plants have to be set in a season, and the saving of time and labor is an object, such niceties in the preparation of plants would scarcely be desirable.

Sometimes it is well to "puddle" the roots before planting. This is done by mixing water with some rich soil (such as garden-mould), until it is of the consistency of thin mortar, and dipping the roots into the mixture. Mr. B. F. Wilson, one of the largest strawberry-

growers on James river, strongly recommends the use of an ammoniated superphosphate of lime with the soil, say a couple of double handfuls to the bucket of earth.

Planting and Cultivation.

The most approved method of field culture in this country, and one practiced upon many thousands of acres, is to plant in rows $2\frac{1}{2}$ or 3 feet apart (the latter distance being generally preferred), and the plants placed about a foot apart in the rows. Planted in this way, about 14,500 plants are required per acre.

There are two methods of planting in common use. One of these consists in the use of a line to mark out the rows, the other in marking them out with a plough. By the first method the line is stretched across the field, and the plants set beside it either with the dibble or garden-trowel; some cultivators, in order to greater exactness, have the distances between the plants marked on the line.

The holes should be made large enough to admit the roots without crowding and the plants set deep enough to cover all the roots, but no deeper; if the crown is buried, the plant is very liable to decay. When a large number of plants are to be set, several lines will be necessary.

In making the rows with the plough, the ordinary process of "listing," in universal use among our market-gardeners, is resorted to. First a furrow is made with a light plough just where the row is to be; then furrows are made on the right and left, with the mould-board towards the first furrow, thus throwing the earth back in a ridge, which, being cut down with the hoe or rolled, gives a row in the most thorough order for planting.

In planting, the dibble or trowel may be used, but the use of the hand, as in setting cabbage or tobacco plants, is equally efficacious and more expeditious. In planting in the large way, each hand should have a row to himself, and every two hands should be attended by a boy to drop plants. Two good hands and a boy will set from six to eight thousand plants in a day.

As soon as the plants begin to make foliage, and grass and weeds make their appearance, they should be ploughed and hoed, and throughout the growing season great care should be taken to keep them clean and the soil light. If plants are wanted for the next season's planting, a portion of the field should be left without cultivation after the runners appear, in order that these may root. From this portion a large number of young plants may be taken in the fall or following spring, but the crop of fruit will be light. All

that portion of the plantation which is intended for fruit should have the runners systematically removed as rapidly as they make their appearance, and before they have had time to exhaust the plant by making leaves. Thus cared for, each plant will increase in size very rapidly, and, by the following spring, will occupy a space from six to ten inches in diameter and have many fruit-stalks, each loaded with bloom.

In the Northern States, winter protection is necessary, for which a mulching of straw, leaves or coarse grass is in common use, the mulch being removed from the crowns of the plants in spring; but in our climate this is unnecessary and even hurtful, unless great care is taken to make the mulch very light over the crowns.

In the spring, after the soil has been put in order by thorough cultivation, the plants must be mulched with hay, cut straw, pine-tags, &c., in order that the fruit, when ripe, may be kept clean. Some apply the mulch before—others after—bloom, but care should be taken not to apply it too early, as experience shows that early applications retard ripening. It is not necessary to spread the mulch between the rows, but it is necessary to put it carefully around the plants and of sufficient thickness to protect the fruit from dirt, sand, &c., in the hardest rains.

After the fruit has all been gathered, the mulch should be removed, and the beds treated in all respects as they were in the previous year.

The usual practice is to plough up the plants after the removal of the second or third crop, from the general opinion that they deteriorate very much after that time. That this practice should become necessary when strawberries are grown after the old style of letting them alone, is manifest, but if the method given above—the hill-system—be strictly adhered to, it is of very doubtful utility, at least for some very desirable varieties. The finest Wilson's Albany berries that I have seen this season were grown by Mr. S. C. Robinson on a bed that had been planted for six years; and Mr. Chamberlaine, one of the most experienced of our cultivators, has beds that have been planted eight years. He says, moreover, that his old beds generally yield him the largest crops.

Gathering and Packing the Fruit.

Almost everywhere the fruit, when ripe, is gathered by women and children, to many of whom the strawberry season is a rich harvest. The berries are almost everywhere picked at a fixed rate per quart, two cents being the usual price. When the picking season

commences, about ten pickers for each acre in cultivation should be engaged for the season. So many hands are not necessary at first, but it is best to have them, in order that when the berries are ripening rapidly, there may be no deficiency of skilled pickers. The picking must not be allowed to lag behind the ripening, and the only sure way to avoid this is to have a surplus of labor.

Before commencing to gather the fruit, a room must be provided in which to store the berries and pack them for shipping. It should be fitted up with wide shelves on one or more sides, on which to place the baskets as they are brought in from the field, and where they should remain until it is time to pack them. There should be shelf-room for all the berries picked in a day, and space enough in the room for crates, empty baskets, &c., &c., as well as ample room for packing.

Before going to the field, the pickers are numbered, and their names and numbers, or simply their numbers, entered upon a tally-board, which is kept in the field. This board is placed in charge of a "tally-keeper," generally an intelligent boy, who stations himself at some convenient point, and near him is set one or more handbarrows to receive the baskets. Each handbarrow should hold from 40 to 60 quart baskets. Each picker takes a row and keeps it to the end; after picking from two to four baskets, she takes them to the tally-keeper, and after calling out to him "so many baskets for such a number," deposits them on the handbarrow. As soon as the latter is full, it is borne by two hands to the packing-house.

In gathering for shipping long distances, it is all-important that the fruit should not be permitted to get too ripe; indeed, it should not be permitted to get thoroughly ripe upon the vine at all. One side of the berry only should be a full red, so that a basket of strawberries, when first picked for shipping, would be considered as scarcely eatable. Fruit thus picked ripens in the basket, and, on reaching its destination, is in fine order and finds ready sale. Great care should also be taken to avoid bruising in gathering; this is readily done by teaching the pickers to remove the berries by pinching off the fruit-stem with the nails of the thumb and forefinger.

Packing the fruit is an important operation, and is usually entrusted to an experienced hand. Instead of packing as the baskets come in, it is best to let them remain upon the shelves until near the hour for shipping, thus giving them time to cool off and to settle. When the berries are to be sent to different markets, the packing is so conducted that those longest picked shall go to the nearest.

There are several forms of baskets in use, as the American, the Beecher, the Burlington Tree Basket, &c., all of which have their advocates among strawberry-growers. For each pattern of basket, crates are provided to hold 24, 32, 48 and 60 baskets, or quarts—the quart basket being in almost universal use among shippers. From all that I have seen during the season just closed, I incline strongly to the baskets and crates of the American Basket Company, as being as well, if not better suited to the wants of our shippers than any other.

Where strawberries are grown only in a small way, or where they are to be sold in the nearest town or city the morning after they are gathered, attention to all the details above given is not necessary; but where they are grown in quantity, and are shipped to a distant market—say New York, or even Boston—to be consumed three or four days after they are gathered, it is a matter of the greatest consequence that every precaution be taken which may tend to ensure the fruit's reaching its destination in *perfect* order. Let it be borne in mind that good fruit in good order always commands fair, if not high prices, whilst fruit that is put on the market in bad order is always sacrificed.

Yield and Profit of the Strawberry Crop.

A few words before closing as to the yield of the strawberry and the profits arising from its cultivation. The yield is generally set down at from 50 to 100 bushels per acre, or say from 1500 to 3000 quarts; and repeated instances have been mentioned in which it was still higher. In order that I might present the Society with some exact information as to the average yield in Virginia, under good management, I requested several gentlemen to keep accurate accounts of this year's crop, which we all know has not been an average one.

Messrs. Davis & Cooper, on James river in Surry, shipped nearly 20,000 quarts from an area of about ten acres, the land being ordinary farm-land of that region, without extra manuring.

Mr. B. F. Wilson, also of Surry, shipped 18,000 quarts taken from six acres. His strawberries had a light application of ammoniated superphosphate of lime.

Messrs. Franklin Davis & Co., from one acre on the Brook Turnpike one and a half miles from this city, gathered 3200 quarts, the land being in good condition, but not extraordinarily rich.

From nine acres of land near Norfolk were taken 32,000 quarts, more than 3500 to the acre. The owner of this prolific "patch"

uses fertilizers, I learn, with a lavish hand, putting on as much as 1000 pounds superphosphate of lime to the acre.

Mr. Wilson writes me that his sales for the season averaged him 25 cents per quart; and says this is considerably below what it would have been had not the steamer on which he shipped his fruit to Norfolk met with an accident, resulting in the sacrifice of two large shipments. At 25 cents per quart, his gross receipts were \$750 per acre.

I have seen the account of sales rendered Messrs. Davis & Cooper by their New York commission merchant, from which I find that their sales ranged from 25 to 50 cents per quart. Putting their average at 30 cents, we have a gross return of \$600 per acre on ten acres in Surry, and \$960 from one near Richmond.

It may be interesting to state, in this connection, that they shipped strawberries from here to New York, both by express and by ocean steamer, and that by both they reached their destination in safety, and brought satisfactory prices.

From the above examples, which are not cited because there was anything extraordinary in them, but because the statements as to yield, price, &c., are exact, and are to be relied upon, there can be no doubt at all as to the large profits attending the cultivation of the strawberry. May we not hope that the success of those now engaged in its cultivation may stimulate many others to follow their example, and that in a few years every train and every steamer going northward during the strawberry season may go loaded with this delicious fruit.

W. GILHAM.

Editorial Correspondence.

Editor Southern Planter and Farmer,—The first thing that strikes one after crossing the Potomac is the backwardness of vegetation as compared with that of our section.

We left you a fortnight since gathering peas and strawberries, and here they are not yet ripe, indeed will not be for a week. While this is only what was to have been expected, still one cannot restrain a sigh of regret as he remembers that you are enjoying all these fruits of early summer, while your correspondent is obliged to content himself with the meagre fare of winter.

Another thing that strikes us forcibly is the high culture of the farms; the perfect condition of the fencing; the neatness, sometimes the elegance of the houses, as we pass through Maryland and Pennsylvania, presenting a sorrowful contrast to the desolated fields and ruined homesteads of our own beautiful State. And yet, sorrowful

as the contrast is, there is a lesson for us to learn from it, viz: that if we, with our diminished capital, would resuscitate our fallen fortunes, we must do as the people of these States do; labor ourselves, cut down our farms to such size as we can work properly, and turn our attention to those crops which are more certain and profitable than tobacco and cotton can ever be without slave labor.

There is not a farm in all this country without its orchard, which is as carefully cultivated and cared for as any portion of the estate, and from which, in many instances, the largest income is derived.

Thrift, industry and neatness are good qualities of these people, which it becomes us to imitate. Their faults and vices, to which we are not blind, we need not adopt.

In horticulture and pomology, they are far in advance of our section, as also in landscape-gardening; and combining, as these do, profit with comfort, their effects are readily traced in the quiet ease and home-happiness which everywhere seems to prevail.

The lateness of the season prevents gardens and nurseries from presenting as attractive an appearance as they otherwise would; still the prospects are encouraging.

At York, Pa., I had an opportunity of seeing the "Napoleon 3d" strawberry in full bearing. It was remarkably prolific, and although not ripe, had already attained an extraordinary size. Unfortunately, it does not ripen early, but in every other respect it is decidedly superior to the Wilson's Albany, and fully deserving of all that Messrs. Evans & Co. claim for it.

Here in Philadelphia business seems to be brisk, and the citizens are employed in making money and discussing politics.

The latter at present absorbs a great deal of their attention, and both parties are making earnest preparations for the approaching contest. Fortunately, you and I are not disturbed with these subjects.

The seed and flower establishments here are extensive and elegant, and the entire populace appear to have a taste for everything pertaining to flowers; which their wealth enables them to cultivate and gratify.

In the midst of a heavy rain (for it rains here every second day), I went to see Mr. Meehan, and found him, like his magazine, at the top of the list. His nursery is a splendid one, and conducted as only such a thorough master of his business could manage it. The kindly interest which he takes in the welfare of our section, together with his standing as a botanist and pomologist, commend him and his magazine to the most favorable attention of our people.

Writing in great haste, I must defer to another mail many mat-

ters of interest, and this hurried epistle must be excused for the same reason.

M.

Philadelphia, June 9th, 1868.

Overbearing of Vineyards.

We know there are a few persons who believe in permitting the vine to set and ripen all the fruit it will; but we also know that whenever we have watched the practice of such advocates, it has resulted, within a few years, in either mildew of leaf and fruit, rot, or an imperfect ripening of more than one-half the fruit. Our oldest and most experienced vignerons; those who have unwittingly practiced a year or two of overloading the vines; all vegetable physiology and study of the natural laws of life and health, tell us that an undue exhaustion of the system must, if continued, soon be followed by disease or premature death. Acting upon these teachings, the true vineyardist—he who owns his vines and expects to continue yearly gathering the fruit therefrom—will now go over them carefully, note the strength of the vine, and judging with good common-sense knowledge of supply and demand, remove at once all apparent superfluous or overloading number of bunches while they are yet but in the blossom, and have not drawn from the regular supply food belonging to the vine. Young vines are especially injured by allowing them to fruit freely; and many a one, because his canes are good and strong the second year from planting, permits them to fruit eight or ten bunches, and thus reduces their natural amount of vitality not yet fully gained or matured. In vegetable life, an over-exhaustion, while the plant is young and immature, is just as permanently injured as over-working, or in any other way exhausting the natural system of animal life before it has reached maturity.—*Horticulturist.*

STIR THE GROUND FREQUENTLY.—A frequent stirring of the surface of the ground during the early and growing part of the season is almost, if not quite, as good as a coat of manure. In fact, our experience and observation have taught us that we succeed better with our young plantations, or our bearing ones, of raspberries, currants, dwarf pears, etc., by a regular system of stirring the surface-soil at least once a week, than by means of a heavy dressing of manure and only two hoeings for the season: A light, loose surface admits heat, air, and moisture, and all combining necessary food for the plant; while a hard, compact surface excludes these influences and prevents the action of chemical or natural changes, and hence the comparatively moist condition of the plant.—*Horticulturist.*

THE SOUTHERN PLANTER AND FARMER.

RICHMOND, VIRGINIA,

JULY, 1868.

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Editorial Department.

Error Corrected.

The reader will observe that in "Marlow's" communication, on page 412, the product, in cheese, of 50 good cows is stated by the writer at 1,000 pounds. It was, without doubt, intended for 10,000, the amount required to make good the calculation of \$1,400, at 14 cents per pound.

A Survey of Virginia and the South.

A stupendous work of incalculable value and importance in its relations to the material interests of every Virginian is announced as about to be undertaken under the auspices of Washington College. It is no less than a survey, with a view to collect exact information of the topography, mineral resources, industry and natural history of the South, particularly of the State of Virginia, and to publish the same for the benefit of the public generally. The survey is to be conducted under the auspices of a Board composed of the President of Washington College (Gen. Robert E. Lee), the Professor of Mathematics (A. L. Nelson), the Professor of Applied Mathematics (W. Allan), the Professor of Natural Philosophy (R. S. McCulloch), and the Professor of Chemistry (J. L. Campbell). "Such a survey by such a Board," adds the *Richmond Whig*, from which we extract the above specifications, "will need no recommendation outside of its intrinsic merits. It is the great imperative want of the State." The *Whig* elsewhere says in substance: "That upon the judicious application of their time and energies to the material interests of the people of Virginia depends their advancement in wealth, power and social and intellectual elevation."

Acknowledgment.

We gratefully and respectfully acknowledge the courtesy of the Washington and Jefferson Societies of the University of Virginia in inviting us to attend their final celebrations, the one on the 29th and the other on the 30th of June. It would have afforded us a season of recreation and enjoyment which we reluctantly forego, but which we were forced to decline by reason of incompatible engagements.

Trial of Johnston's Patent Self-Raking Reaper.

On Thursday, the 18th of June, we received an invitation to accompany our friends H. M. Smith, Esq., Col. Shields (of the *Whig*) and others, to the highly improved farm of Jas. H. Grant, Esq., near the Brook Turnpike, for the purpose of witnessing a trial of Johnston's Patent Self-Raking Reaper. The day was beautiful, no better season for harvesting could have been asked, and soon after reaching the farm, two mules were hitched and the Reaper put to a heavy test, in a field of rye that stood very thick on the ground and had been much matted by the heavy storms of wind and rain that have passed over this section recently. The machine did its work well, making a smooth cut six feet in width, scarcely leaving a straw standing. The special feature in this machine is the self-raker. It is so arranged that one bar in five rakes off, and throws into swath, out of the track of the machine in making its next round; or, by the use of a spring pressed by the foot of the driver, a gate is thrown open (which hitherto only permitted the passage on to the iron track attached to a perpendicular shaft and driven by the same gearing that drives the sickle of the pivot-wheel of one of the bars), and all the rakes are in full play, throwing into a continuous swath. This feature is valuable; and we here venture to suggest that if more strength can be secured in arranging the bars, without adding materially to the weight of the machine, the inventor will have secured, in our judgment, a first class self-raker.

As we before remarked, the test was a severe one, and we heard no one who witnessed it express other than satisfaction.

Although the weight of the machine is only 800 or 900 pounds, and it is claimed as adapted to two horses, it was our observation that the addition of a third mule later in the day greatly facilitated its performance.

The Rockbridge Alum Springs.

By reference to our ADVERTISING SHEET (where, too, our readers will find many other good things), it will be seen that the above-named popular place of resort is now open to visitors. During the dog-days, now fast approaching, the fortunate possessor of a surplus of greenbacks can find no cooler or more delightful place to spend them, than with Messrs. Frazier & Randolph, who are pledged to extend to all visitors that old-fashioned Virginia hospitality so well-dispensed at the Rockbridge Alum for years past.

Correspondence of Southern Planter and Farmer.

CROPS, &C., &C.

My Dear Sir,—The monthly correspondence of the *Farmer's Register* was one of the most interesting and valuable features of that "treasury of knowledge." I am pleased to see that your intelligent correspondents are making it quite as useful a department of the *Planter*, and I will now attest my sincerity by a few seasonable suggestions.

The wheat crop of the present season seems to have escaped destruction almost miraculously. Every field which I saw, or of which I heard, was, ten days ago, thickly covered with rust—scarcely a blade escaped—and we all supposed

the crop doomed to destruction. It has been preserved by a natural remedy, which British farmers have long taught was the only cure for rust, but which, in the course of my experience as a farmer, I have never known to be effectually applied. We have had a succession of violent rain-storms, attended and followed by high winds. Some of the rankest of the wheat is laid, but the rust has entirely disappeared, and the grain is maturing well. The heads are larger and fuller than for many years, the grains averaging three on a bar. The heads have about twice as many grains as last year. The crop will be somewhat diminished by the effect of the storms, in breaking off at the root all those stalks that had been weakened by the fly. The quality of the crop will also be much affected by the foulness of the seed which farmers, in their poverty, have been compelled to use. A great desire is now manifested for clean seed. Has Col. Skinner's machine for cleaning wheat of cockle, cheat, and other impurities, proved a success? The prospect of an average crop of wheat is very cheering to the farmers, who have been so long doomed to sow without reaping. Let not speculators be induced to believe that the product will be *immense*—there is no hope of such a crop as we used to make in olden times. I hope it will be remunerative to those who have labored so hard, amidst many discouragements, to make it. The breadth of land sowed is small—not half, probably less than a third of what was sowed fifteen years ago. The freedmen, as a rule, sow no wheat and they occupy a large portion of the best low grounds: and the small farmers in the “forest” heretofore so productive in wheat, have, in many cases, been unable to procure seed or fertilizers.

I am glad to see that intelligent farmers are inquiring with interest, “What shall we do?” Permit me to say that the question has not yet been satisfactorily answered, and we can hope for no such answer until we again live under a free government. Neither railroads nor ships, nor small nor large farms, nor potatoes, nor peas, nor fruit, nor even “cranberries,” can save us, until we assert our dignity as men and vindicate, by our suffrages, our right to self-government. It is easier to teach what *not to do*, and in our present distressed condition as a people, this negative instruction will be much the most effectual. Let the people cease to worry and harass each other with petty litigation—with motions for interest, the costs of which often exceed the sums recovered—let them avoid the folly of mariners in a shipwreck, who fight over the straws and drown each other in contending for the last plank. The madness of the people during the plagues of London or of Athens scarcely exceeded the soulless and unfeeling conduct now exhibited by many of the people of Virginia. Their supplies have run low, and they must fain satisfy their hunger by eating each other. I speak in behalf of others. I have not been harassed by this petty litigation, and if I were starving, I would perish before I would worry my suffering fellow-citizens by these petty prosecutions.

Very truly yours,

WILLOUGHBY NEWTON.

Linden, June 17, 1868.

[The machine to which Mr. Newton refers is “Arnold's Cockle Machine,” which was examined by Col. Skinner some time since, who thought well of it. We are not aware that it has been thoroughly tested, however, nor do we find the machine in the hands of any of our leading machinists or dealers in Agricultural implements.

We believe the patent-right is under the control of Messrs. Minor & Peyton, of Charlottesville, Va.—ED. SO. PLANTER AND FARMER.]

Since the foregoing letter was in type, Mr. Newton has furnished us with the following modification of the views therein expressed in relation to the wheat-crop:

My Dear Sir,—I regret very much to have to say that my congratulations to the farmers in my letter of the 17th inst. on the safety of the wheat-crop were premature. We had the plentiful moisture desired by the British farmers, and the plants were effectually cleansed of the rust, and the crop seemed to be maturing well. In a few days, another enemy equally formidable (mildew) made its appearance. This has been nearly destructive of some crops, and very injurious to all. My neighbors, who are harvesting the Boughton wheat, say it is not more than half a crop. My early purple straw, on clover-fallow, which I shall commence reaping to-day, is very much lightened, and many of the grains shrunken. The blue-stem white, I understand, is in a still worse condition. The *Planter* for June speaks of the failure above Richmond, and I have private advices of the condition of the crop in Piedmont and the Valley, from a gentleman of extensive observation in Fauquier, who gives a most discouraging account of the prospects in that fine wheat-growing region.

The disease known in the books as mildew, vulgarly called the scab, does not seem to be well understood by many farmers. Thirty-odd years ago it destroyed the whole crop of the State. Much was written on the subject in the *Farmer's Register*. In a letter published in the monthly correspondence, I communicated to the editor its effects upon the crop about to be harvested, with some observations on the nature of the disease, taken from the article "Agriculture," in the *Edinburgh Encyclopædia*. The disease of this season is, I hope, not so universal or destructive, but it is, beyond doubt, a very serious calamity. "What shall we do?" Not repine—not fly in the face of Providence and curse God. By no means; but let us endeavor to bear with patience the ills we cannot cure, and, by mutual kindness and good offices, do all in our power to mitigate the calamity. Grass and vegetables are abundant; the stock are all fat; the corn, though late, where well-cultivated, is thriving; and we shall not starve. For this, at least, we should be thankful; and but for "man's inhumanity to man," the calamity, though great, would not be overwhelming.

I had not seen the June number when my last letter to the editor of the *Planter* was written. Mr. Ruffin makes a very favorable show on the sheep question. His success is very gratifying to his friends and the farmers generally. He discusses well a most important subject. His command of the Richmond market, when he can sell in person, at his own time and his own price, without the intervention of an agent, gives him peculiar advantages. Forty cents for wool unwashed is nine cents above the highest Baltimore price, and five dollars is much above the market price of lambs; but with these abatements, and making some allowance for occasional depredations by dogs, I entirely concur in his views, which are confirmed by my own limited experience. I have lately sent to market the wool product of my small flock, averaging rather more than five pounds a head. The sheep are a cross of Southdown and Cotswold. Only one ewe bore two lambs, and there is one lamb, I think, for every ewe in the flock. The cost of keep has been literally nothing, unless a charge for the grazing a field of wheat during winter and early spring should be set down to their account. This is a question of great importance in connection with sheep-raising, in a system of convertible husbandry. It has long been the practice of the farmers on the light lands of Essex and King & Queen

to pasture their wheat fields with sheep until quite late in spring, to the evident improvement of the wheat, as they believed. I have occasionally done so from necessity, and not from choice, without being able to perceive any injury to the wheat. The field grazed by the sheep last spring is on oat-fallow—the growth of straw is not equal to that on the clover-fallow—the crop is somewhat later—the heads are large and well-filled, and exhibit no sign of the disease which so extensively affects other fields. The retarding the ripening of the wheat for a few days by grazing, may possibly have caused the wheat to pass the critical period of attack. Whatever may be the cause, the sheep in this case have certainly done no injury to the crop, whilst they were kept fat during the inclemency of the winter and spring, and did not lose a lamb or a lock of wool.

Will Mr. Ruffin be so good as to elucidate this point in his next article?

Yours very truly,

WILLOUGHBY NEWTON.

Linden, June 23, 1868.

Dear Sir,—Though not a farmer, yet a country doctor, who circulates a good deal among our farmers, I have concluded to drop you a line relative to the prospective wheat-crop in this region of our State, fully aware that whatever can be collected as information relative to this important crop will be not only appreciated, but must prove advantageous in a material point of view.

In consequence of the drought which prevailed in this portion of the State in the months of August and September of the past year, but a comparatively small area of fallow-land was broken up for seeding, and what land was ploughed was so poorly done as to have rendered it almost futile. Wheat was seeded from the 10th September to the 1st of November, some few patches were sown as late as the middle of November. The drought continuing through October to a considerable degree, much of the seed sown did not come up; then a winter of uncommon severity followed, many light snows fell, severe freezes, but no snow of greater depth than six inches fell during the winter, thus leaving it to the chances of destruction from the intensity of cold. The result of these different unfavorable influences upon the crop could have been easily foreseen—a short crop upon the ground. Yet, wherever the wheat was put in early and well, and the fallow thoroughly prepared, the stand good, the yield will be a very fair one.

A gentleman in my office a few days since, residing in the western portion of the county, stated that upon a clover-fallow, sowed in September, he would secure 25 bushels to the acre, observing, as you will do, that no fertilizers, which are so fashionable “with other folks,” are used here.

The yield here will be greater in the aggregate than last year, and the quality of grain better than for any year since the war.

We are much behind our Eastern Virginia brethren in skilful agriculture. We are unwilling to spend a little for experimenting with fertilizers. *We are beginning to experiment* with improved agricultural machinery, and like it so much that each man’s neighbor seems much pleased with the new mower and plough and apple-mill. We are waking up—getting out of the brush.

No region of country is better adapted to the successful culture of wheat than Washington county—an excellent soil, genial climate, magnificent pasturage, gypsum invaluable and inexhaustible; but skill and tact we don’t use. “Reconstruction” of labor and pursuit, we hope, will soon set us all right. P.

Abingdon, Va., June 25, 1868.

Dear Sir,—Moses acknowledges "to haff seed de show," not by returning the back numbers of your *Planter and Farmer*, but by enclosing the price of subscription.

Allow me to express my high appreciation of your Journal, and my warmest wishes for its success. I am a new farmer, utterly inexperienced. Your articles are practical, and treat of subjects which, though they may be familiar to old farmers, are outside of the knowledge of those like me (and they are not few in number), who, ruined by our late war, unfitted for professional life, along which we have skirmished or starved off from that life of ease through which we had lounged, have turned to the bosom of our mother earth, thence to draw our sustenance.

To Dr. Atkinson's hint I add my request that all correspondents should give their real names. "Marlow" may be, and no doubt is, as reliable as Dr. Atkinson, but he does not carry the same weight, for I do not recognize him in his *nomme de plume*, while I know my old acquaintance, the Doctor, used to be thought a *farmer*—for I, too, am an old Virginian, a Tuckahoe.

Very truly your brother planter and farmer,

JAMES BENAGH.

Harris' Station (N. & D. R. R.), Ala., June 18, 1868.

CROPS IN YAZOO COUNTY, MISSISSIPPI.

Mr. Editor,—The farmers in this vicinity, so far as I know, have pretty good crops—considerably better than they have had for the last four or five years at this season. The planters generally have planted very largely in corn, as the most of them have had to buy corn for the last two years, and have at last come to the conclusion that it is a good deal cheaper to raise it. Last year and the year before it was *cotton and nothing else*, but it has changed this year to corn and sweet potatoes; and, I hope, for the better. The corn-crop looks very promising all through the country, but we are beginning to need rain very much. Farmers that planted twenty five and thirty acres last year have this year planted one and two hundred acres. The cotton-crop looks very fine, and if the worm don't come, there will be a pretty good crop in this county; for the crop is all clear of grass, a thing that has not been known since the war at this season—generally speaking, the cotton is very grassy in June. There are several farmers here that have gone to regular Yankee farming—a little of everything.

I hear some talking of going into the stock business next year.

There is a striped bug that made its appearance about two weeks ago, and has nearly ruined the gardens, especially the Irish and sweet potato-crops; and, so far, *there is no remedy* to rid us of them; and if there is anything that the editor knows of that will do any good, the neighbors in this vicinity would be very glad to hear what it is. Some persons think if there is a rain, they will leave.

The freedmen this season have worked *exceedingly well* up to this time, but there is to be an election on the 22d of this month, and I don't think they will do as well until after the election is over. There are so many electioneering around through the country that they don't know what to do, and will be considerably disturbed until it is over.

Very respectfully yours,

JOHN MCKEE.

Locust Grove Plantation, near Satartia, Yazoo Co., Miss., June 13, 1868.

Dear Sir,—You will, on the reception of this letter, without delay and fail, send specimen numbers of *Southern Planter and Farmer*, one number for April, one for May, one for June, and also Prospectus, to the address of ———, Salltillo, Lee county, Miss. I would inform you that this gentleman is a good and true Southern man by birth and education, and has many relatives living in the good old State of Virginia.

You will attend to this matter, and also write him, as he is a man of sound and practical sense and of some influence, and would be of much service to you in the way of getting you some subscribers, as there are a good many Virginians living in Lee county, Miss.; and you could not get a better man than the above-named gentleman to get you subscribers, as there is no one that takes your Journal in his part of the county.

I would inform you that I am a man that runs on a steamboat on the Mississippi river, and when at home, live in the Old Dominion.

I want to see your Journal circulate in Mississippi as much as I can, so send specimens as I have named. Very respectfully, NAT. MATTHEWS.
On the Mobile and Ohio Railroad, below Corinth, Miss., on my way to Vicksburg, Miss., June 13, 1868.

My Dear Sir,—Please find enclosed my subscription to the *Planter and Farmer* for this year (1868), and please excuse me for not having sent it sooner. I have been intending to do so for some time, but kept neglecting. But, sir, on the receipt of the last (June) number, I could resist my conscience no longer, and determined to send the amount at once; for one who is doing so much for the agriculture of our country ought to be paid punctually for the *best*, the *very* best agricultural paper published in the South. The last (June) number is richly worth the subscription price for a whole year; and I cannot, for my life, see how any man, who ever pretends to farm or plant, and can read, can afford to be without the *Planter and Farmer*.

There are, sir, in the last number eight communications: Ruffin's, Marlow's, Mott's, M. S. R.'s, J.'s, Imboden's, Ficklen's and Hite's, all valuable, interesting and instructive; and, sir, while all the subjects treated of are important and interesting, those on fertilizers are *particularly* so in these hard times, and I hope you will endeavor to have them thoroughly and fully discussed, and, if possible, find out the best and most reliable. I am a great advocate for fertilizers, but I have been so often deceived, not to say cheated, that I am almost afraid to venture on anything. Last spring (1867), I bought a manipulated guano that proved to be *perfectly worthless*, and was a total loss of money and time—not only the actual cash amount invested, but also a loss to the amount of my crop, sir, that I would have made had the manure been good, and that is no small matter with a poor ruined Confederate in these times of scarcity of money and no credit. I am trying another kind this spring, and may, for aught I know, be cheated and swindled again.

It will soon be time now to begin to prepare for the wheat-crop, and I would like to have your advice, and that of your numerous and intelligent correspondents as to the cheapest and best fertilizer for wheat. I see your correspondent "J" speaks highly of the Chesapeake Phosphate," prepared by Isaac Reynolds & Sons, Baltimore. What is it—and what does it cost?

Please acknowledge the receipt of my subscription, and believe me your well-wisher,
Most truly and respectfully yours, R. H. ALLEN.

Nonintervention, Lunenburg county, Va., June 23, 1868.

Book Notices.

DE BOW'S REVIEW.—The May and June numbers of this Southern Institution (under one cover) is received. We cannot help expressing the belief that there is a wide field of usefulness before this Journal. As a faithful record of Southern and Western progress, as an organ of the business man in every sphere of action, as the repository of statistics *valuable to the whole country*, it has no superior. We earnestly hope for it a success commensurate with its high merit.

THE NEW ECLECTIC.—With the July number of this entertaining Journal we received the following NOTICE, to which we take great pleasure in calling the attention of our readers. This enterprise should receive a handsome support at the hands of all lovers of choice literature:

“FACTS OF INTEREST TO THE SOUTHERN READING PUBLIC!”

The publication of *The New Eclectic* was commenced on January 1st, 1868, with a view of furnishing for the South a monthly Magazine, in which would be presented, in a cheap and popular form, the most valuable articles of all the Quarterly, Monthly and Weekly publications of the world. The *Richmond Eclectic*, a work of a similar character, which was favorably known throughout the South, was bought out, the office removed to Baltimore, where there are larger facilities for the purpose, and numerous improvements were introduced, so that now the Publishers feel assured that in every respect their publication is the best of its class in the country.

Having spared no expense or trouble in their efforts to please, they had confidently hoped that *The New Eclectic* would meet with very extensive favor from the South. It has now been before the public for six months, and though the press has been unanimous in its praise, and the most prominent literary gentlemen in the South have offered their congratulations, a recent trip of a special agent through the South has developed the fact that for every copy of *The New Eclectic* circulating in the South there are at least fifty copies of Northern magazines, and these too of those which are most offensive and insulting in their tone toward the South.

These facts are offered for what they are worth. It is merely asked, is the South willing (for though so poor, she is able, since she liberally patronizes Northern publications) to support a magazine in full sympathy with her people—published by Southerners, for Southerners, and in a city that has lavished her best blood and treasure for Southern rights? It is not on the strength of her sympathy alone that the patronage of the South is solicited; but the Publishers feel assured that the intrinsic merits of their publication are not inferior, in any respect, to those of Journals emanating from Northern sources. They ask all to examine for themselves. A specimen number will be sent to any address on the receipt of 25 cents. The subscription price of the Magazine is \$4 per annum. Each monthly part contains 128 pages, beautifully printed and prepared for binding. Philosophy, Fiction, Poetry, Narrative, Biography, Fun, Art, etc., agreeably intermingled. Very liberal inducements to new subscribers, clubs, agents, canvassers. Particulars upon inquiry.

TURNBULL & MURDOCH,

Publishers of *The New Eclectic*, 49 Lexington St., Baltimore.”

THE RICHMOND AND LOUISVILLE MEDICAL JOURNAL.—We welcome the June number of this highly interesting and scientific Journal, and while we parted

with its accomplished editor with many regrets, we are much pleased to see that in *vigor* and *interest* "The Richmond and Louisville Medical Journal" has sustained no loss by its removal from the Old Dominion. Many of our subscribers are medical men of high standing in the Southern States, and we take occasion here to commend to them the above-named Journal as in every way worthy of their support.

THE GALAXY.—The July number of this handsome Monthly is on our table, and presents an attractive appearance. Its enterprising Publishers have secured the services of many contributors whose names are familiar to the whole country; and its pages are rich in reading matter, varied to suit all tastes. The subscription price is cheap, only \$4 a year.

Address Sheldon & Co., 498 and 500 Broadway, N. Y.

THE LEONARD SCOTT PUBLISHING COMPANY.—We need not say how eagerly every man connected (even remotely) with the press of this country looks for the appearance of each monthly and quarterly issue of this Company, and how much *every one* is indebted to them 'tis hard to tell. In the days long ago, we remember "Blackwood;" 'twas old then and wore the same close-capped, grey bearded visage on its front it bears now; and as we look on it, as stamped on the June number of 1868, we wonder if *that old man* has not at last discovered *the fountain* of youth. He brings us to-day all the freshness of a *living literature*, and, at the same time, links us by pleasant memories to the past. Long live the Leonard Scott Company, and may our people sustain them with a liberal hand.

HUNT'S MERCHANTS MAGAZINE.—The June number of this valuable Journal is before us, and we think it one of the best we have seen for a long time. The articles are eminently practical and useful; many of them most timely; and the whole number should be read by every man who can get it.

"The Currency Question," "Powers and Responsibilities of Directors," "Panics and Prevention," "The Condition of Trade," "The Condition and Prospects of the South," and "Nationalization of the Telegraph," are *all strong articles*. The writer of the last article makes a *bold strike* at *centralization*, and speaks honest words that should make the ears of many holders of the *strings of office tingle*.

Every number like that issued in June is worth more than the subscription price for a whole year.

RURAL AMERICAN.—The enterprising editor of the above Journal, Mr. T. B. Minor, publishes, in the June number, a notice of its removal to the city of New York as the future place of publication. The following extracts will explain the reasons which led to the change:

"REMOVAL OF THE RURAL AMERICAN TO NEW YORK CITY—EDITORIAL OFFICE AT
NEW BRUNSWICK, NEW JERSEY.

On the 1st of June the publication of the *Rural American* was removed to New York city, and the editorial and general business office established at the city of New Brunswick, New Jersey (near New York), where the proprietor owns an extensive farm.

The office is located as above to save the heavy expense of rental in New York, while the paper can be edited with much more efficiency than in a large

city, and the price be considerably reduced in consequence of the reduced expense thereof.

* * * * *

New York city furnishes many of the requirements to render such a publication complete in all its departments, rendering it necessary to remove the publication of the *Rural*, in order to make it what its proprietor designs it to be in illustrations, typographical execution, &c.

An *Agency* will be established in New York in due time; but until such *Agency* is established, all business pertaining to the paper must be transacted at the New Brunswick office, in Market Square, Hiram street.

* * * * *

Direct letters, "T. B. Minor, New Brunswick, New Jersey," and exchange papers to "Rural American," same place."

THE LAND WE LOVE for July is full of interesting matter, which is the product of *Southern talent*, and we thank its gallant editor over and over again, as we read it, for the energy he displays and the pride he takes in thus bringing to light (hitherto) "*hidden treasure*."

Did time and space allow, it would give us pleasure to tell our readers who *feel too poor* to take "The Land We Love," something of what is in it. As we cannot, however, we must say to every Southern family, *deny yourselves and take it*. Terms, \$3 a year in advance.

Address Gen. D. H. Hill, Charlotte, N. C.

We have received and placed on our exchange list THE NEW YORK MERCANTILE JOURNAL, a weekly of *great value* to merchants and business men generally. Subscription price, \$3 per annum.

Our enterprising friends, Messrs. West & Johnston, Booksellers and Stationers, 1006 Main street, have kindly sent us a work entitled HOUSE-PAINTING—PLAIN AND DECORATIVE, by Jno. W. Masury, which promises to prove of value.

It treats of "The Art of House-Painting," "Paints and Colors," "True Economy in the Use of Paints," * * * "Consumption of Paints in the United States," "Weight of Paint and Measures of Oil Required to Cover a Given Number of Superficial Feet of Wood or Brick," &c.

Such a work is much needed by our country friends, who must paint to preserve their buildings, and must do it as economically as possible.

THE ADVERTISER'S HAND-BOOK, from Evans' Advertising Agency, 129 Washington street, Boston, Mass., has been received. Mr. Evans has proven, in all our dealings with him as agent, a *prompt and reliable business man*; well-deserving of our confidence.

We can commend him and a few others only as thus deserving; for so far as our experience extends, we have found the most of those agents with whom we have had business relations to be very unreliable.

CHEMISTRY APPLIED TO THE ARTS.—From a lecture delivered before the University of Virginia on the 30th of May last, by J. W. Mallett, Ph. D., M. D., F. C. S., Professor of Applied Chemistry in that University, on the subject of "Chemistry Applied to the Arts," we cite a few paragraphs, merely as samples of the rare qualities of this masterly production, filling thirty-eight pages of

printed matter. We are indebted to the *Richmond Whig* for these extracts, and for others which we hold in reserve for future insertion in our Journal :

“In a civilized community, the University should be the highest exponent of the actual condition of human knowledge. It surely, therefore, cannot be deemed right that applied science—a department of knowledge which to-day yields such magnificent results, and which absorbs the attention and engages the best efforts of thousands of able and well-trained intellects throughout the civilized world—should be excluded from or neglected in the list of studies which the University recognizes as parts of a liberal education.

Nor, in fact, does any such idea prevail. It is seen that education in the principles and applications of natural science is of the highest value to the student himself, and through him to the community of which he is a member. For many years past, the opinion has been steadily gaining ground amongst intelligent men, that opportunities for the study of natural science, both in its general laws and special applications, should be presented to the youth who are to form the educated classes of the State, and that where facilities for such study already exist they should be fostered, extended and improved. In some communities, this view has originated within the higher schools of learning themselves; in others, it has been urged upon their attention by the pressure of public opinion from without. In some places, it has been carried into practical effect; in others, it remains yet in the form of an ill-defined belief that the time has come when some such change must be made in the system of public education; but everywhere—on both sides of the Atlantic—we find the idea in existence, and yearly growing in recognized importance.

* * * * Just at present, there is a renewal of eager interest in the subject, due in part to the stimulus of last year's International Exhibition at Paris. There have been published extracts from replies made by a number of eminent English jurors who attended that Exhibition, to official enquiries addressed to them upon the subject of its bearing upon technical education.

Dr. Lyon Playfair says :

‘When he found some of our chief mechanical and civil engineers lamenting the want of progress in their industries, and pointing to the wonderful advances which other nations are making; when he found our chemical, and even textile manufacturers uttering similar complaints, he naturally devoted attention to elicit their views as to the causes. So far as could be gathered by conversation, the one cause upon which there was most unanimity of conviction was that France, Prussia, Austria, Belgium and Switzerland possess good systems of industrial education for the masters and managers of factories and workshops, and that England possesses none.’

In the last expression, the word ‘none’ must, of course, be understood in a relative sense only.

Prof. Tyndall, F. R. S., ‘expresses a general concurrence in the views of Dr. Playfair,’ and says :

‘The facilities for scientific education are far greater on the Continent than in England, and, when such differences exist, England is sure to fall behind as regards those industries into which the scientific element enters.’

Dr. Frankland, F. R. S., says :

‘He refers the want of progress in the manufactures of this country (England) chiefly to the almost utter lack of a good preparatory education for those destined to take part in industrial pursuits. This great defect in the School

and College education of England affects the masters and managers of our factories even more deeply than the workmen themselves. The former have but rarely had any opportunities of making themselves acquainted with the fundamental laws and principles of physics and chemistry; they, therefore, find themselves engaged in pursuits for which their previous education has afforded them no preparation, and hence their inability to originate inventions and improvements. It is true that such men not unfrequently imagine themselves inventors, and yearly files of specifications abound with instances of their so-called inventions. The great loss of time and money attending these futile patents would be rendered impossible by a very moderate, if accurate, knowledge of chemical and physical science. In the polytechnic schools of Germany and Switzerland the future manufacturer or manager is made familiar with those laws and applications of the great natural forces which must always form the basis of every intelligent and progressive industry. It seems that at length this superiority in previous training is more than counterbalancing the undoubted advantages which this country (England) possesses in raw material.'

* * * * *

In discussing the immediate future, the prospects of recuperation, and the direction which public and private effort should take, there seems to be no point upon which thinking men are more generally agreed than the necessity of varying the forms of Southern industry and Southern products, instead of attempting to revive the purely agricultural policy of the past, which resulted in the Southern States producing for sale to the rest of the world little or nothing beside her magnificent crops of four or five valuable staples, while depending upon other States or countries for domestic supplies of almost every article of necessity or convenience. Agriculture must, of course, still be pursued, as the basis of all prosperity; and, doubtless, to be successful, must be practiced with much more intelligent skill than ever before—but with the uncertain character and amount of the labor upon which Southern farmers will obviously have to rely for a long time to come, it is clearly to be desired that other forms of industry should be developed, less vitally dependent upon labor—and, above all, labor in connection with particular seasons—as a condition of success.

* * * * *

The student of pure science occupies himself solely with facts and principles, regardless of any artificial bearing that may be given them upon the wants and comforts of the human race. He who devotes himself to applied science must not only study with equal attention these same facts and principles of nature, but, in addition, must notice the direction and the form in which they may be made subservient to the purposes of daily life.

The latter, therefore, is called upon to examine the wants of society, constantly varying in character and urgency.

In this matter-of-fact world, and under the organized system of commerce of modern times, the measure of the urgency of such wants is the money-price which the means of satisfying them can command—and hence the student of applied science, in dealing with the question of the attainment of any particular object, has to consider—

- 1st. The possibility of its attainment.
- 2d. The cost of its attainment.
- 3d. The price which society will be willing to pay for its attainment.