

THE  
SOUTHERN PLANTER.

*Devoted to Agriculture, Horticulture, and the Household Arts.*

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

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

FRANK. G. RUFFIN, EDITOR.

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IMPROVEMENT OF LAND FROM ITS  
OWN RESOURCES.

[From the papers of the Nottoway Farmers' Club.]  
*Every farm has within itself the means of its  
own improvement, unless there is deficiency of  
the calcareous element.*

MR. PRESIDENT:

The subject of manure being incidentally connected with the one under discussion to day, I shall make some observations on it.

Manure forms the basis of all rational agriculture; and, in proportion as its manufacture and application is understood, and practiced, is the measure of its success and perfection. There is no country, whatever may be its natural fertility, that can long suffer neglect in this particular without detriment; unless, like lower Egypt, it is enriched by periodical inundations; as there is none, however sterile, even though a drifting sand-heap, that may not, by its judicious application, be so reclaimed as to minister to the sustenance of man.

Virginia is now a melancholy instance of the former position. Possessed, naturally, of physical superiority equal to her geographical position, and with an amount of labor and capital at her command fully equal to the development of her vast resources, she has neglected the improvement and preservation of her soil, and having given to politics the talents due to agriculture, is now bleeding from a thousand wounds inflicted by improvident husbandry.

It is not my purpose to speak of manures specifically now—I may do that hereafter—but to impress their general importance on your attention, and to urge you to a more diligent use of the means about you, to augment in every judicious manner their quantity and quality on your farms. In every other employment there may be some doubt as to the means adopted to an end, but here the law which governs them is as immutable as Nature herself; study her laws, husband her resources, imitate her example, and we shall scarcely fail to be more thrifty, wise, and better.

Manure may be made of everything once endowed with vegetable life; animals and minerals also add important elements. The bones scattered over the farm are rich in phosphate of lime; and there never was a seed destitute of phosphates; every ditch bank is rich in potash and earthy salts; every waste bottom in humus and vegetable remains; every rag, leaf, stick, and plant, is sufficiently supplied with azote and early salts to contribute, by its decay, to reproduction.

The laboratory of Nature is greatly to be preferred to that of the chemist; the one destroys, the other constructs; the one, by its analysis, furnishes the elements of which plants are composed; the other applies these elements, under the wonderful principle of life, to the production of the plant itself. I would not disparage agricultural chemistry, it is an infant science just struggling into being, and one from which, when further matured, much good may be expected; but that in this department there are now great errors, confusion, and uncertainty, it would be uncandid to deny; gifted minds, however, are at work in this noble field the world over, to whose united labors we look with interest and hope. And whilst it may be regarded next to impossible ever to understand the proximate principle of vegetable life, its physiology, and nutrition, any more than the origin, essence, and ultimate destination of any thing, there is much that it may do as the handmaid of practical agriculture, to lighten its burdens and speed its course.

All plants require for their growth a certain degree of nourishment, derived either from the soil or from the atmosphere, or from both; and those are considered best for fallow, which fix the greatest amount of the ammonia of the atmosphere with the least exhaustion of the soil; of these, the leguminous plants, such as clover, peas, beans and the like, are regarded best. The former of these, however, takes up about eighteen per cent. of lime, which, if removed, must be supplied by artificial means in quantities sufficient to meet the wants of the

cultivated crops, or a diminished production must follow. This is to be found in leaves, ashes, and in vegetable mould, as well as in the vast deposits of gypsum and limestone of our mountains.

Rye, buckwheat, corn, or any other green crop, from their powers of fixing, are alike valuable as fertilizers; so that Nature herself may, by judicious management, be made to administer to her own wants by fixing the gases of the air, by searching out the hidden minerals of the soil, and by combining and giving form to the elements of vegetable decay about her, so as to give a new and constantly increasing vigor to her productions.

It may reasonably be asked, if this be so, how happens it that we behold every where around us stunted vegetation, scanty crops, poverty of soil, and innumerable gullies and galds? I answer, they are the result of a system not only of the most grinding tillage, extending through a series of years, but of the most reckless and wasteful disregard as well of the soil itself as the means scattered so profusely around them for enriching it.

The earlier settlers of our State found it covered with an unbroken primeval forest, rich in the alluvium of a thousand centuries formation; they transmitted it to us covered with pines and broom-sedge—a comparatively low degree of vegetable production—without themselves being enriched in proportion to the exhaustion, thereby giving to the branches, rivers, sounds, bays, and to the Atlantic itself, the priceless inheritance due to posterity. It is our duty, as it is to our interest and honor, to repair these long accumulating injuries and not fly from them. I believe we have the means and the spirit to do it. Had other countries the facilities and incentives we possess, judging from what they have already accomplished, there would be no room to doubt. Are we less enlightened, energetic, and patriotic than they?

The Indians on the coast of South America were found by the earlier Spaniards using fish-offal as a manure; the Peruvians, for centuries, have used guano; and in Italy, from remote antiquity, leguminous plants have been resorted to as fertilizing fallow crop; and among the inhospitable steppes of the Alps, the hardy Swiss has learned the art of using liquid manures, so concentrated and rich in azotic compounds, as to push vegetation rapidly to maturity during the short season of their summer, and thereby redeem their country from the frowns of Nature herself, by wisely directed energy and skill. In the more genial provinces of France, extensive and costly establishments are used to manufacture both solid and fluid manures; and in England, great expense is incurred for oil-cake, for the same purpose. So that with all these lights before us, and with every advantage over them of government, soil,

climate, and taxation, we have but to will success, and its full horn will crown our labors.

Respectfully submitted by  
J. M. HURT.

[From the papers of the Nottoway Farmer's Club.]

#### FEEDING HORSES.

I regret very much that owing to causes which I need not here mention, I failed to make a special experiment, the result of which I could report to the Club. I will, endeavor, however, to give in place of that the result of my experience as to the best mode of feeding horses and the provender best adapted to their marts. In the course of my farming I have tried several kinds of provender for horses, such as corn, fodder, oats, shucks, clover and rye. For several years I dispensed with oats to a great extent, not because I did not consider them good food for horses, but on account of the uncertainty of the crop. I attempted to substitute them by rye, and so productive was the first crop, that I was induced to hope it would prove a valuable crop. But the yield continued to decrease, until I gave it up as unsuited to our climate; and moreover, the provender itself was not as good for the horses as I had hoped it would be. During my discontinuance of the oat crop, my horses did not keep in as good order, and I do not think were as healthy as when I used oats. Last year I had the good fortune to secure a fine oat crop, and I have had no difficulty in keeping my horses in good order. So marked has been the difference that I am determined hereafter to use extra efforts to raise a good crop of oats. To do this I intend to put my moist and flat lands in oats, and the dryer and higher lands in wheat.

As to the other kinds of provender, I think well-cured clover hay, can be made to take the place, to a certain extent, of corn-fodder, as I think when properly cured it is equal to it. The great difficulty is in finding time at the proper season of securing it, to attend to it. In order to feed shucks to horses to advantage they should be cut very fine and mixed with meal. To cut them so fine is a difficult matter and Sinclair's Straw Cutter is the only one I have found that would answer a good purpose. They may be as nutritious as fodder, but being of a tough fibrous texture, they are better suited for cud-chewing animals than for horses, and therefore had better be used for them than horses when other provender is plentiful.

Respectfully submitted,  
RICHARD IRBY.

LARGE HOGS.—Mr. Butler Hamlin, of Hamlington, Wayne county, Pa., slaughtered in December last, two pigs, eight months and ten days old, weighing respectively 339 and 314 pounds.



*From Sir Francis Head's Faggot of French Sticks.*

### SLAUGHTERHOUSE OF MONTMARTRE.

About half a century ago there lived in a country village in England, as maid-servant, a pleasing-looking young woman, of such delicate sensibilities that, to use her own expression, "She couldn't bear to see a mouse killed." She married the butcher. At about the same period, Napoleon, who cared no more for the effusion of human blood than the stormy petrel cares for the salt spray of the waves of the Atlantic Ocean, from similar sensibilities, determined to cleanse Paris from the blood of bullocks, sheep, pigs, and quadrupeds of all sorts, by suppressing every description of slaughterhouse within the city, and by constructing in lieu thereof, beyond the walls, five great public abattoirs, besides smaller places of execution for pigs, and also for horses.

The largest of these is that of Popincourt; but as the greatest quantity of cattle are slaughtered at Montmartre, I drove to the avenue Trudame, where, on descending from my cabriolet, I saw before me a rectangular establishment, resembling cavalry barracks, surrounded by walls 389 yards lengthways by 150 yards breadthways.

On entering the iron gates, I found on my left a small bureau, which looked like a guard-room, and from which, on expressing my wish to go over the establishment, I was very civilly furnished with a conductor.

In front of the entrance-gate was a space shaded by trees and bounded by a barrack-looking building of fifteen windows in front, the residence of the principal officers. On the right and left, in three parallel rows, were six sets of buildings (twelve in all) separated from each other by broad roads which isolated each. Affixed to the walls of this enclosure were other buildings, the purposes of which will be consecutively described, as also two "abreuvoirs," or watering-places for cattle, and one fountain.

The officers of the establishment consist of an inspector of police, whose duty it is to see that the whole interior of the abattoir is clean and in a state of "salubrity;" that there are no disputes among the people employed; and that the animals are not beaten ("qu'on ne frappe pas les animaux").

A principal inspector of the "Boucheries."

A sub-inspector of ditto.

Four guardians (surveillans) of the oxen, sheep, calves, &c., to be slaughtered.

Two superintendents for skinning, "triperie," &c.

Four men for cleaning the paved streets, &c., of the interior.

One porter.

One gate-keeper (concierge).

The slaughtering department is composed of 64 slaughterers, each of whom has his slaughterhouse, his "bouverie," or stable for cattle,

his loft and granary for hay and corn, and his chamber for dressing and undressing.

On walking to the space in front of the entrance gate, and between it and the garden belonging to the barrack-looking residence of the officers above named, I found within it, in two separate divisions called "parks," lying under the shade of lilac and laburnum trees in blossom, several sheep and bullocks just arrived.

Immediately adjoining to these enclosures, common to all the 64 boucheries, I entered a lofty "bouverie" 150 feet long, admirably ventilated by windows above on all four sides. Down the middle there ran before me a broad passage, on each side of which were a series of square compartments, 25 feet long by 15 broad, separated from each other by wooden railings. In those on my right I saw, lying on straw as clean as that in the show-stables of a London horse-dealer, a quantity of bullocks, two, three, or four in each cell. In corresponding cells on my left were standing or lying, separated from each other by a low partition, a number of sheep and calves.

In the first of these cells, on the back of one of a small flock of sheep, I saw, lying fast asleep, a shepherd's dog. The bullocks and sheep were eating hay; the calves, my conductor told me, had "soupe."

"What is it made of?" I asked.

"Meal, eggs, and warm water," was the reply; and he added that throughout the "bouveries" there was warm water for the calves. Every cart-load of calves, the heads of which are never allowed to hang outside, is obliged to leave half of its straw for their use in the abattoir. There are eight bouveries such as the one above described.

Above each line of cells for bullocks and calves is a loft to supply them with hay, and adjoining, are, open to the air and protected by iron wire, a series of large rooms, containing each a table and a chair, in which are to be seen, neatly arranged, the clothes and boots of the butchers, who, even if they had the inclination, are not allowed to offend the citizens of Paris by appearing in the streets in their professional garb.

Passing the four working yards, containing the 64 slaughtering-houses, I was next led to a large building, in which the blood of the animals slaughtered is subjected to a scientific chemical process, under which, after lying for some time in clean, round, shallow tin pans, it is poured into barrels: first, for the purpose of refining sugar; and secondly, for manuring the earth. The entrails, after being carefully emptied into a pit constructed for the purpose, and emptied every day, are well washed by an abundant supply of water.

On entering the "triperie" department, I found a number of women employed in boiling, in a series of coppers supplied by three large vats of water, sheep's heads and calves' feet.

An adjoining building appeared nearly full of sheep's feet, neatly tied up—not as Nature had arranged them, in fours, but—in dozens.

On entering a range of 48 melting-houses, admirably ventilated, I was astonished to find that, although they were nearly full of pails of tallow, there was no unpleasant smell. Above are a series of apartments, in which reside the women and men employed in this operation, which I had always incorrectly fancied to be unavoidably very offensive.

In proceeding towards the 64 boucheries arranged in the middle of the entrance, I went into one of the bouvieries, to look at a bullock that my conductor told me was just going to be slaughtered.

It was a beautiful morning, and, although the sun was hot, the atmosphere, where I stood, felt quite refreshing. He was lying in a cell by himself, perfectly tranquil, on clean straw, and, with his fore-legs doubled under him, was chewing the cud. His great black nose, which almost touched the white litter, was wet and healthy; his eyes were bright; his tail quiet, for, as the air was cool, there was not even a fly to tease him.

As we were gazing at each other, a butcher, carrying a short rope, followed by a boy holding in his right hand a stick, in which I particularly observed there was no goad, walked up to him, and gently putting the noose over his horns, and then making him arise, he quietly conducted him to his doom. The poor creature walked slowly through the hot sunshine with perfect willingness, until he arrived at the threshold of the broad door of the slaughter-house, where suddenly stopping, he lent backwards, and stretched out his head, evidently alarmed at the smell of blood. The butcher now slightly pulled at the rope. Without barking of dogs or hallooing of men, without the utterance of an imprecation or of a single word, four slight blows on the right hock with the boy's stick made him, after looking for a second or so fearfully to the right and left, hurriedly enter, after which he instantly appeared to become quite quiet. The rope from his head was now gently passed under his off fore-leg, and, on its being tightened, a couple of men in wooden shoes, clattering towards him over the wet slippery pavement, by a sudden push on his near side tumbled him over. He was scarcely down when one blow of a mallet made him completely senseless, two others were given him for precaution's sake, and a butcher then, forcing his knife into his broad chest, instantly withdrew it.

There was a dead silence for some seconds; notwithstanding the color of the knife, the blade of which I observed pointing to the ground, no effect was produced. At last out rushed a stream or river of blood, which, first black and then bright red, flowed in little waves along a gutter into a receptacle made to contain it.

As the great creature lay lifeless before me, I felt very forcibly how extraordinary was the fact, that while the Demon of War—Napoleon Buonaparte—had, it 1811, established in Paris the merciful arrangements I had witnessed, it had taken the Goddess of Peace upwards of six-and-thirty years to prevail upon the inhabitants of England in general, and upon the Lord Mayor and Corporation of London in particular, to abolish a system not only of barbarous cruelty, but which, by creating feverish excitement, amounting occasionally to madness, has rendered more or less unwholesome the meat of every wretched victim that has been killed in a metropolis (consuming annually 240,000 bullocks, 1,700,000 sheep, 28,000 calves, and 35,000 pigs) whose inhabitants, as if in satirical ridicule of themselves, delight publicly in singing, when in large congregations they sit down to dinner—

“Oh, the roast beef of old England,  
And oh, the old English roast beef!”

Several calves were now driven into a yard containing four or five tressels, upon which, one after another, they were placed on their sides by men in wooden shoes, who held them down, while butchers—also in sabots—not only cut their throats, but their heads quite off; thus in a few seconds most effectually combining death with the operation of bleeding, which, in England, is cruelly made to precede it. The blood of each calf was caught in a pan by the men who held it down. As fast as the animals were killed, skinned, and cleaned, their carcasses, by means of ropes and pulleys, were hung up, arranged in lines, and then wrapped up in lincn cloths as white as snow.

Observing to one of the butchers, who had rather a red-republican-looking countenance, that some of the sheep appeared to be very thin:—

“Ah!” said he, with a slight shrug and a gentle sigh, “there are fat ones and lean ones, for we must have meat for everybody.”

“And yet how does that agree,” said I to myself, “with your fraternity and equality?”

As the hours for slaughtering were now nearly over, I had an opportunity of seeing the simple process of sluicing, by means of an abundant supply of water from a cock in each of the 64 boucheries, the red slippery floors of several of the slaughterhouses, which in the course of a few minutes were made as sweet and clean as the flags of a wash-house. As soon as this was effected, the butchers, washing themselves, and then slipping out of their wooden shoes, walked to their rooms to assume the decent dress in which they had entered, and in which they were about to return to their respective homes.

The charge at the abattoirs for killing cattle is from one franc to one and a half per head; besides which the butcher claims, as his perquisite, the blood, brains, and entrails.



If, when the animal is killed, its flesh is found to be diseased, or even bad, instead of being converted, as in London, into sausages for the rich, or into pies and patties for the poor, it is confiscated by the Inspector of Police residing within the establishment, who instantly sends it off to the Jardin des Plantes, to be eaten by the wild beasts,—by lions,—tigers,—bears,—by eagles,—by vultures,—and by other birds of prey. The meat for the inhabitants of the city is usually sent out at night only, but animals to be killed are received at any hour.

The number slaughtered per week at the single abattoir of Montmartre amounts to about 900 oxen, 400 cows, 650 calves, and 3500 sheep.

On leaving the establishment I walked completely round the lofty walls that enclose it; but neither to windward nor to leeward could I detect the slightest smell indicative of the bloody business transacted within it.

### MORRISON'S REAPER.

Brunswick, Va., Sept, 30th, 1856.

*Editor of the Southern Planter.*

DEAR SIR;—In the July number of the Planter you express a wish to hear from the performance of Morrison's Reaper in the wheat field, one of which you had seen, cutting clover-hay, on the farm of Mr. Allen.

Having witnessed a trial of one of these excellent machines in a field of light wheat on the farm of Mr. J. R. Jones of this county, I do not hesitate to say that its performance was every thing desirable in a first class Reaper. Although, on the occasion referred to, it laboured under some disadvantages, yet it was perfectly evident that it was a perfect implement and could not be easily surpassed in the execution of its work, by any other Reaper that has yet been presented to the inspection of the farmers in this region of country. I am not mechanic enough to describe, intelligibly, its different parts, but it struck me as no little advantage to have the blades so constructed as to cut both above and below like a pair of shears; this is a great improvement. Another excellency is, that the wheels are protected by a covering, which secures it against any disadvantages arising from dirt and grit, accumulating on the cogs; and its easy draft is a great recommendation—two horses drawing it with the greatest imaginable ease. All the Reapers that I have seen, seemed to me to be drawn with too great difficulty,—requiring three horses to give them sufficient motion. In Morrison's Machine this difficulty is obviated.

It is built of the best material, in the most substantial manner and cannot be otherwise than very durable. Its performance in the field is admirable—cutting a clean and wide row with great rapidity. Mr. Morrison, I think, has in this Reaper supplied the wants of the wheat grower in a very essential particular—giving him a machine of rapid and faithful execution,

of easy draft and unusual durability, and therefore deserves the thanks and patronage of every one interested in saving a wheat crop. You cannot too highly recommend it.

Very respectfully, Yours, &c.,

D. T. POYNER.

### THRASHING BY STEAM POWER.

E. S. Judd, of Stevens' Point, Wisconsin, informs us, that last spring he and his brother, H. A. Judd, purchased a four-horse power steam engine, of Hoard & Son, of Watertown, N. Y., which they had applied with much success to thrashing grain. They first tried it with a common thrasher and separator, usually driven by four horses, but finding it more powerful than they expected, they applied it to an eight-horse thrasher, which it worked with ease to the astonishment of those who first witnessed it, and who were so well pleased with its performance that they threw up their hats, and gave three cheers for steam. He informs us that competent judges assert, that their four-horse steam engine drives the thrasher and separator with greater ease than eight horses. The farmers all like it, as it is twelve per cent. cheaper than horse power for thrashing. It is mounted on wheels; the farmers furnish them with wood and water, and they go from place to place thrashing by steam. This portable steam thrasher is a great acquisition to agriculture, and he thinks that the farmers of Illinois should devote their attention to steam thrashing as well as steam plowing. With a four horse thrasher, they have thrashed 100 bushels of wheat per hour.—*Scientific American.*

### TRIAL OF REAPING MACHINES IN ENGLAND.

A trial of Reaping Machines, under the direction of the officers of the Royal Agricultural Society, took place on the 13th and 14th of last month, near Colchester, England. Four machines were entered to cut a field of wheat, consisting of 54 acres. The machines were a McCormick's by Burgess and Key; a Bell's by Croskill; a Hussey's, by Deane & Dray; and a Palmer's.

All the machines were severely tested, on level and rolling ground, and on furrowed land, and worked well the whole time.

The Judges awarded £20 to Bell's; £15 to Hussey's, and £15 to McCormicks. In making the awards, the Judges said: "From the results of these trials, we regret to observe that very little importance has been made in this class of machines since last year." They consider that for general harvest purposes, the machines of Croskill (Bell's), and of Messrs. Burgess & Key (McCormick's), are to be preferred; but for reaping only, they think Dray's (Hussey's) decidedly the best machine.—*ib.*

## COMPARATIVE PRODUCE OF DIFFERENT KINDS OF WHEAT.

A correspondent of the London Farmers' Magazine furnishes the following comparative statement of the produce of ten quarters (eighty bushels) of different kinds of wheat:

No.	DESCRIPTION.	Wheat	Whites.		House-	Seconds.	Middl'gs.	Offal.	Waste.
		per bush'l.	st. lbs.	st. lbs.	holds.	st. lbs.	st. lbs.	st. lbs.	st. lbs.
1.	Norfolk red, sprouted,	52½	—	147 4	—	—	70 2	81 3	1 4
2.	White Dantzic, fine,	57	—	244 6	17 2	—	—	58 10	4 2
3.	Revetts,	59½	—	200 10	—	—	83 2	56 6	—
4.	Rostock,	60	—	248 8	—	—	27 0	64 12	2 6
5.	White Whittington,	60	217 2	48 2	13 2	—	—	59 2	4 12
6.	Essex,	61½	250 0	13 11	21 1	2 2	58 1	7 5	—
7.	Essex and Suffolk, mixed,	61½	—	272 10	—	—	20 0	59 10	Inclu'd.
8.	Petersburgh, hard,	62¾	—	225 10	—	—	85 10	47 2	ditto.
9.	Ditto. soft,	63	—	247 2	—	—	64 4	47 2	ditto.
10.	Talavera, fine,	63	233 5	39 7	15 10	—	—	69 3	2 2
11.	White Norfolk,	63	265 0	15 4	10 10	—	—	63 0	6 0
12.	Spalden's ditto.	64¼	—	243 0	53 2	—	—	64 8	7 12
13.	Spanish hard,	64¾	—	115 2	—	—	229 10	24 8	0 8
14.	Old Red Norfolk,	65½	—	280 0	11 11	—	20 7	59 1	3 0
15.	Cape of Good Hope, white,	66	277 2	35 10	—	—	10 0	51 6	2 12

I shall now proceed to make a few observations upon these specimens, taking them *serialim* as they stand in the schedule, according to their weight per bushel.

No. 1. I have introduced this sample into the table in order to illustrate the difference in produce between a wet and dry harvest. It was grown in the memorable year 1800, when there was not a sound sample of wheat harvested in the whole of Great Britain. It was of the same species as No. 14, with a difference of 13 lbs. per bushel in weight—the consequence of being sprouted. This, however, does not represent, by far, the difference in product of flour, as the following statement will show:—

	No. 1.	No. 14.
	st. lbs.	st. lbs.
Flour, per quarter, . . .	14 10	29 3
Middling, do. . . . .	7 0	2 1
Offal, do. . . . .	6 2	6 0

Thus the sound dry wheat produced just double the quantity of flour of the sprouted, the middlings from the latter being so inferior as not to be worth grinding into seconds; whilst those from the former produced good seconds, and residue were still available for coarse biscuit. Thus a wet harvest not only produces a damaged and inferior quantity of wheat, but lessens almost incalculably the quantity of produce

by exhausting the substance of the grain. To such an extent was this the case in 1800, (as the above specimen will prove) that the people were driven to the necessity of substituting barley, oats, peas, &c., in the making of bread; and all the quality of the bread thus made was so loose in texture as to be eaten with a spoon instead of being cut in slices with a knife.

No. 2. The weight of this fine Dantzic is only 57 lbs. per bushel, and the produce about 25½ stones per qr.; whilst the offal is nearly equal to that of No. 14, being 5 st. 12 lbs. per quarter. It is evident that this wheat, which always bears a high price, is not a profitable article to grind alone; but it is exceedingly useful for mixing with other wheats in small proportion, imparting both strength and color to the flour. This wheat is chiefly brought down the Vistula from Prussian Poland.

No. 3. This coarse wheat is chiefly used in the making of flour for the London market, where the bakers use it in dusting their kneading-boards. For breadstuff is seldom purchased, except in very dear seasons, when the working classes want a cheaper article of flour. The millers, however, do not scruple to mix a small proportion of it in their households.

No. 4. Rostock, like the Dantzic wheat, chiefly used for mixing; but the quality is



very inferior to it, and the price proportionate.

No. 5. The Whittington wheat was formerly grown extensively in Norfolk and Suffolk England, where it was a great favorite, and deservedly so, with the millers; but not being a profitable wheat to the farmers, they have discontinued its growth. The quality of this species was very superior, as will be seen by the large proportion of whites and households it produced. Indeed, the quantity of flour it yielded in proportion to its weight was greater than any of the others, except No. 15, and the quality appears to have been equal to that.

No. 6. This is well known as a profitable wheat to the miller, and it always commands high price, every particle containing flour being available.

No. 7. This mixed sample is of the same weight as the last, the produce in flour rather greater, which probably arose from its being converted into households instead of whites. It is a profitable wheat and the quality excellent.

No. 8. This hard wheat is too steely to be profitable to the miller, unless at a low price, and for a coarse description of flour. The quantity of the middlings proves this: but the strength of the flour makes it useful for mixing with weaker qualities, and for this purpose it is generally used.

No. 9. This is a much better description of corn, producing about twenty stones more flour to the ten quarters, and an equal quantity less middlings, the offal and waste exactly the same. This wheat is chiefly grown in the Russo-Polish provinces.

No. 10. The Talavera wheat is now almost extinct, being quite out of repute and favor with the farmer on account of its liability to sprout when ripe in the field. It is also less productive than many other kinds under similar culture, and therefore less profitable. These facts are much to be regretted, for certainly there is no other species of wheat that can compare with it in quality of flour, or profit to the miller and consumer; as it will yield a large amount of the finest flour per quarter, and the largest amount of bread per sack of any kind of wheat I know of, with the exception of No. 15, of which but little has ever been imported.

No. 11. This can scarcely be called Norfolk wheat, as the constant changing

of the seed of white wheat by the Norfolk farmers render it difficult to trace the origin of a particular sample. It was, however, grown in that county, and whether of Suffolk or Essex origin was of excellent quality, yielding a very large proportion of the finest whites, with but a small proportion of offal.

No. 12. This appears to have been a good yielding grain that worked up into flour very closely, the proportion of offal being small.

No. 13. This hard Spanish wheat does not appear to have met with proper treatment from the miller, otherwise the middlings and the flour would have exchanged figures. I have known this description of wheat *yield a greater weight of flour than that of the grain before the process*, whilst the weight of offal was incredibly small. As it is probable that we may have some quantity of hard Spanish wheat this year, it would be well for the millers to make themselves acquainted with the best modes of manufacturing it, being peculiarly adapted to coarse flour.

No. 14. The old Norfolk red, which may be considered the very original stock introduced by Romans at the time of their occupation of Britain, will never be excelled for profitableness to the farmer or miller. It is peculiarly adapted to the dry light soils of Norfolk, but does not lose its character when transported to other soils. In the latter case however, it requires to be occasionally renewed, otherwise it is liable to be inoculated with the fallen from the fields, which would deteriorate its quality, or, at least, change its character. In Norfolk it has maintained that character for ages, and will probably continue to be a favorite with the farmers of that country, on account of its adaptation to the soil.

No. 15. This is a species of which we obtain but a small quantity. The weight was very great, and the produce of flour in proportion. The enormous quantity of the best whites shows the fine quality of the wheat, whilst the very small proportion of offal illustrates the advantage of heavy over light wheat. There is, in fact, no comparison: and whilst heavy wheat cannot be purchased (in reason) too high, a light quality almost always fetches more than its worth.

## MR. BARRY'S ADDRESS

*At the Fruit Growers' Association, Burlington, Iowa.*

Let us look at the list of our best foreign pears. The Bartlett is supposed to be English, originated in 1760, and it is certainly the best variety ever obtained in that country. Gunsell's Bergamont is the next best, but it is uncertain, and a poor tree while young. Dunmore, one of Knight's, stands next—a large fine fruit, but too uncertain. These, then, are about all the English varieties admissible to our list of select sorts. White Doyenne and Brown Beurre are old French sorts, supposed to date back almost to the days of the Roman Empire.

The Louise Bonne de Jersey originated as a chance seedling, at Longueval, in France, in 1778—originally "Bonne de Longueval."

The Flemish Beauty, originally called "Davy," originated by chance in a Flemish village called Delftinge.

The Duchesse d'Angouleme sprung up by accident, in a garden, in 1809. It bore in 1810, and the year before, the gardener had ordered it cut down, and only changed his mind after it had received several blows with the axe. The Urbaniste was raised by the Comte Coloma, in 1783.

Beurre Diel was found on a farm, near Brussels. Doyenne Boussock is an old Belgian sort, called "Double Phillippe," "Beurre de Merode," etc., origin not known.

Belle Lucrative was one of Esperin's seedlings, one of the first and best; he called it Seigneur, the French renamed it. His method was, I believe, to sow the seeds of good pears.

Beurre Capiamont was raised at Mons, in 1787.

Winter Nellis, at Malines, some seventy or eighty years ago, and called Bonne de Maline; Van Mons Leon le Clere, was raised from the seed by Leon le Clere; the seeds sown were said to be Easter Beurre, d'Aremberg and St. Germain.

Beurre d'Aremberg was a chance seedling, at Enghien.

Easter Beurre, known as Pastorale, Bergamotte de la Pentacole, Doyenne d'Hiver, etc., was found at Lourain, in an old garden of the Capuchins—the original tree was standing in 1825.

Glout Morceau, by M. Hardenpont, in

1789, and called to this day "Beurre Hardenpont." Napoleon, at Mons, in 1808: Beurre Superfin, by Goubault; Buerre Clairgeau, by a man named Clairgeau, at Nantes, in 1850 or 1851; so we might proceed with Berrue Giffard, B. Goubault Beurre Gris de Hiver, B. Langolier, Triomphe de Jodoigne, Jalousie Frontenay Vardee, Epine Dumas, Kostizier, Vicar of Winkefield, and, indeed, all the leading foreign varieties in our catalogues. B. Bose, Beurre d'Anjou, and Doyenne d'Ete, are said to be seedlings of Van Mons, but the facts concerning their origin are not very clear; so that, although the world is greatly indebted to Van Mons for his devotion, through long years, to what he regarded as the regeneration of fruits, upon philosophical principles, yet his seedlings, so far, have not yielded, any great treasure. The Belle Lucrative, of Esperin, is perhaps the finest pear, all in all, produced in the last century. Esperin, in it, left a noble monument to his memory, and his seedlings have produced many other fine fruits. At his death, he placed them in the hands of his friend, Mr. Berckmans, who has them now planted, in New Jersey, and we are in hopes to hear from them in a few years.

Knight's attempted improvement in England, by *hybridization*, but produced only a few good fruits. His pears, with the exception of Dunmore, which I have already mentioned, are of no value in this country. He gained the Black Eagle, Elton, and a few other good cherries. Dr. Brinckle, of Philadelphia, has attempted the same thing in this country, and has already a large number of very promising seedlings in the hands of Mr. Berckmans, for trial. They are all grafted in strong stocks, and will soon bear.

The learned doctor has great faith in this method. He believes it to be as certain to raise a good new fruit by crossing two good ones, as it is to raise a good animal on the same principle. The art of hybridization of fruits, however, is a very nice one, and requires time, labor and precaution, that few people can or will undertake and execute with accuracy.

In this country, as in Europe, our new fruits have either sprung up by accident, or have been produced from the sowing of the seeds of good varieties. Thus we obtain nearly all our peaches, all our hardy grapes, most of our best plums and apples.



Of pears we have already a noble list; all of them either picked up wild in hedges, or from the seeds of good pears.

The whole of Europe has not produced a pear so fine as the Seckel, nor one which succeeds over a wider territory; and then we have the Brandywine, Tyson, Sheldon, Howell, Lawrence, Onondaga and many others nearly as good as these. There are, at this moment, many thousands of seedlings from our best fruits on trial, and we may reasonably anticipate some important acquisitions. Indeed, I believe that before the end of the present century, our best pears, as well as our apples, will be those originated on our own soil. The facts which I have stated concerning the origin of our best fruits, both native and foreign, hold out great encouragement for the prosecution of this work. My advice to you, here in the West, is to sow every good seed you can get. I mean the seeds of those fruits which succeed best here. When your seedlings have made one season's growth, you can bud or graft the most promising on strong stocks or bearing trees and test them in three or four years.

For several years we have been sowing in this way, and if we get one good one in five hundred, we shall feel satisfied; we may get twenty. The interest and excitement which the work awakens, is no mean recompense in itself.

No other fact connected with fruit culture is more fully substantiated by every day's experience than this, viz: To insure successful cultivation, we must have varieties that are adapted to the peculiarities of our soil and climate. Many of your most valuable apples for this country prove utterly worthless with us, whilst many of our best fruits fail entirely with you. This Society, and others of a similar character, are collecting information on this head, of the highest value.

This fact is well established, that the fruits which succeed best in particular localities, are those which originate there, or in others slightly different. I believe the *Baldwin*, *Hubbardson's Nonsuch*, and *Porter* apples, are no where quite as good as in New England. The *Newtown Pippin*, *Swaar*, *Esopus*, *Spitzenburg*, and *Northern Spy*, are scarcely anywhere so good as in New York. Our northern apples are of little value in the south, and the very finest southern apples are utterly worthless

in the north. The reason why those seedling fruits obtained in certain localities are more successful there than elsewhere, cannot be that the climate and soil exercise such an influence upon the seed or the seedling, but because, when the seedlings show fruit, those only are preserved which possess qualities that are desirable there. The *R. I. Greening* would not have been preserved in Georgia, nor the *Raules Janet* in Massachusetts. The true way to advance in this matter will be for the cultivators of each district to sow the seeds of those varieties which succeed best, or which possess the most important qualities. Every successive generation will be more and more acclimated, and thus, in time, fruits will be obtained capable of resisting all the changes and severities of climate, and peculiarities of soil.

In the hurry of our first planting, this experimental culture has been neglected, but it is now high time that it should be taken up in earnest. It may be said that our varieties are already numerous enough, and so they are; indeed we have far too many, but who will say that even the *best* are *good* enough, or that improvement is not necessary or desirable? No, indeed; the work of improvement has scarcely begun.

The reform which has within a very few years, been effected in the nomenclature of fruits, is not the least important part of our progress. What a labyrinth of error and confusion the names of fruits were in, some dozen years ago. Not more than seven years ago, full one-half of all the fruits exhibited were incorrectly named, or not named at all. The specimen trees which we collected between 1839 and 1843, were full one-half-incorrupt, and they were obtained from the most reliable sources then in existence. Of thirty or forty specimen peach-trees from one establishment, scarcely one proved true to name.

In the course of my business as nurseryman, and during my connection with horticultural journals, I have often been surprised, of late, at the number of persons who are particular and discriminating

One man writes, on reception of some trees he has purchased, such and such a variety has dark shoots—the books say they ought to be light. Another says the habit, or the foliage, or the flowers, of his

trees do not answer the description. A third says his strawberries are staminate—they ought to be pistillate; and so on. These are all indications of that spirit of inquiry and observation which is a sure presage of intelligent and successful culture. The time has come when nurserymen must be observing and accurate, or they will lose their business character and customers both. They must plant specimen orchards, test and compare their varieties, read and study, attend exhibitions and meetings, such as this, and by these means acquire such knowledge of their profession as will enable them to prosecute it successfully and honorably. The facilities which dwarf trees now offer for testing a large collection rapidly on a small plat of ground, and at a moderate expense, leave no excuse whatever for the neglect of this work.

The cultivation and management of trees in orchards and gardens are improving rapidly, but much yet remains to be done before we attain even mediocrity. The loss which the United States sustains annually in the careless and unskillful planting and management of trees, if accurately summed up, would be almost incredible.

At the Fruit Growers' Meeting in Western New York, a few days ago, the question was raised; What becomes of all the trees that are propagated and sold in the nurseries of that section?

The opinion of the meeting expressed in the discussion, was, that although many trees were lost and worthless from defective or improper treatment in the nursery and many from damage sustained in transportation, yet more were lost by unskillful planting, and neglect afterwards than from any and all other causes combined.

This I believe to be the case. In all my observations of travel, I think I can safely say that I have not seen one orchard or one garden in a hundred even tolerably managed. By far the greater number look as though the proprietor had abandoned his trees to ruin.

Blown over to one side, anchored in a tough grass sod, buried up in groves of cornstalks, torn and broken by cattle, barked and bruised with the plow, pruned with an axe—thus they perish in their youth, or become old, deformed, covered with lichens, and a prey to swarms of in-

sects, before they have yielded their first fruits. What folly it is in men to invest their money in trees, and then wilfully ruin them in this way! In Western New York, where cultivation is about as good as in any other section, a man who cultivates his orchard or his garden thoroughly, whose trees are healthy and handsome, making vigorous growth, and yielding fine fruit, is talked of as rarity—and so he is.

The specimen trees in the establishment with which I am connected, are but tolerably well managed; the ground is kept clean around them, and is occasionally dressed with manure or compost; so that, in all seasons, we get a fair growth and a fair crop—but amateurs might have theirs vastly better. Yet we are daily asked what we do to our trees? and many seem to think that we have some secret art—some system of "terraculture"—with which the world at large is unacquainted.

We need a complete revolution in these matters. I cannot now detain you to go into the details of planting and mulching; but I beg you who understand these matters, to constitute yourselves missionaries, and preach this doctrine of high cultivation zealously in your respective parishes, and give examples of it in your own grounds, that your practice may correspond with your precept."—*Miner's Rural American*.

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### PORTRAITS-FROM THE FIELD AND FARM-YARD.

BY WILSON FLAGG.

THE OWL.

In my portraits from the field and farm-yard I must not omit the Owl, which is one of the most remarkable of the feathered race, and in one way or another familiar to all persons. There are about fifty species belonging to this tribe; but I shall select for my sketch the common little brown owl, (*strix nœvia*) which is one of the typical owls, and affords a fair specimen of the race. The owl has been, by naturalists, compared with the cat, to which he bears a strong resemblance in his face, in the capacity of his vision, and in his predatory and nocturnal habits. Like the cat, he sees most clearly by twilight, or by the light of the moon, seeks his prey in the night and spends the greater part of the day in dozing. He has a



large head, round, full and glaring eyes, set wide apart, and partially encircled by a disk of white feathers, adding a peculiar and significant expression to his face. His hooked bill turns downwards, so as to resemble the nose in a human face, the general flatness of his features, and his upright position, yield him a singularly grave and intelligent look; and it is undoubtedly on account of these appearances, that he was selected by the ancients as the emblem of wisdom, and was consecrated to Minerva.

After his nocturnal foragings, he rests quietly during the day in some secluded retreat, where he is not likely to be interrupted. His fear of disturbance and his wish to escape the intrusion of other birds has accustomed him to make his abode in desolate and ruined buildings, and with these solitary haunts his image is strongly associated. In such places he resides during the day, and there in company with his mate he builds his nest and rears his young. In thinly settled countries he selects the hollows of old trees and the clefts of rocks for his nest and his retreat. All the small species of the owl, however, seem to multiply with the increase of human population, living upon the rats and mice that accumulate in old barns and granaries. The habit of seeing the owl in these desolate haunts which are supposed to be the abode of wicked spirits, has caused many superstitions to be attached to his image. His voice is supposed to bode misfortune, and his spectral visits are regarded as the forewarnings of death.

The owl is remarkable for the acuteness of his hearing, which enables him to distinguish the slightest sounds; and the plumage of his wings is extremely soft, causing him to fly with so little noise as to be scarcely perceptible. Hence, while he is silent in his own motion, he can perceive the least motion or sound from any other object, and is able to overtake his prey by coming upon it silently in the darkness. The stillness of his flight is one of the circumstances that adds mystery to his character, and has undoubtedly contributed to render him an object of superstitious dread.

When the owl is forced from his retreat in the daytime he is singularly defenceless, and is at the mercy of his enemies, who seem to be aware of his helpless condition. On such occasions many of the

smaller birds assail him and annoy him in various ways, while his purblindness prevents him from defending himself. This is no more than just retaliation upon an enemy who selects the hour when other birds are sleeping, to attack and devour them. It is probable that while sitting upon the branch of a tree or on a fence, after having been driven from his hiding place, he has formed a subject for painters, who have always delighted to introduce him into their pictures, to add expression to a desolate scene—an old deserted house, a ruined tower or an ancient belfry. Hence the owl deserves in a special manner to be named among those animals which are called picturesque.

I will not enter into a speculation concerning the origin of those agreeable emotions which are so often produced by the sight of objects that are suggestive of ruin or desolation. Nature has beneficially provided that many an object which is capable of communicating no direct pleasure to our senses, shall send joy to the heart through the medium of sentiment. The figure of the owl is closely allied with the sentiment of ruins, and to this feeling of the human soul we may trace the pleasure we derive from the picture of this bird in his appropriate scenery. Two doves upon the ragged branch of a tree in a wild and beautiful sylvan retreat, are not more suggestive of pleasing fancies to the mind, than an owl sitting upon an old gate-post near a deserted house.

I have often listened with peculiar pleasure to the distant sounds of the wings of night birds, on a summer evening in the country, while they are flying over short distances in the woods. There is a mysterious feeling excited by these sounds, that seems to heighten the pleasure derived from the delightful influences of the season. But these emotions are nothing in intensity to the scarcely perceptible sound attending the flight of the owl, as he glides by in the dusk of the evening, or in the dim light of a summer moon. Similar in its influence is the dismal voice of this bird, which is heard most frequently during the latter part of summer and in the autumn, when the young ones are out, and use these cries for purposes of mutual salutation and recognition.

These notes in the species which is the subject of my remarks, are singularly wild

and not unmusical. They are far from being disagreeable to my ear, though they have a cadence which is expressive of dreariness and melancholy. These notes might be correctly represented on a C flute by commencing with D in the octave, and running down by semi-tones to one octave below, and constantly repeating this performance, for the space of about a minute, with occasional pauses and slight variations. The owl does not slur the passage, and the separate notes in the scale may be distinctly perceived, with intervals of about a semitone.

The owl is not usually regarded as a useful bird. Perhaps the generality of the tribe deserve to be considered only as mischievous birds of prey, and no more deserving of mercy and protection than the hawks to which they are allied. Not so should we regard the little red owl, or his congener, the barn owl of Europe, or any of the smaller species. The red owl is very serviceable as a destroyer of vermin; and I have no doubt that were the species to be domesticated, one pair of owls would keep our enclosures almost entirely clear of rats and mice. The owl flies low, because his prey consists of those small quadrupeds which are generally out by twilight. It is probably on account of his low flight that he is so seldom seen when on the wing. He is said by those who have observed his habits to be remarkably diligent and expert in taking his prey, and to be in the habit of destroying and carrying to his nest a greater amount of provision than is necessary for the supply of his family.

The reader may form a conception of the usefulness of the owl from the following remarks of Mr. Waterton: "He says that "if this useful bird caught its food by day, instead of hunting for it by night, mankind would have ocular demonstration of its utility in thinning the country of mice; and it would be protected and encouraged everywhere. It would be with us what the Ibis was with the Egyptians. When it has young, it will bring a mouse to the nest every 12 or 15 minutes. But in order to have a proper idea of the enormous quantity of mice which this bird destroys, we must examine the pellets which it ejects from its stomach in the place of its retreat. Every pellet contains from four to seven skeletons of mice. In six-

teen months from the time that the apartment of an owl on an old gateway was cleaned out, there has been a deposit of above a bushel of pellets. \* \* \* When farmers complain that the barn owl destroys the eggs of their pigeons, they lay the saddle on the wrong horse. They ought to put it on the rat. Formerly I could get very few young pigeons, till the rats were excluded effectually from the dovecote. Since that took place, it has produced a great abundance every year, though the barn owls frequent it and are encouraged all around it. The barn owl merely resorts to it for repose and concealment. If it were really an enemy to the dovecote; we should see the pigeons in commotion as soon as it begins his evening flight; but the pigeons heed it not; whereas, if the sparrow hawk or hobby should make its appearance, the whole community would be up at once; proof sufficient that the barn owl is not looked upon as a bad or even a suspicious character by the inhabitants of the dovecote." The English barn owl alluded to by Mr. Waterton, is likewise indigenous in America, though not so common as the red owl.

Few persons are aware of the vast amount of mischief which may be committed in our fields by field-mice, which, without some such check as that of the owl, would multiply with incredible rapidity. Mr. Jessie remarks in his "Gleanings" that "an extraordinary instance of the rapid increase of mice, and of the injury they sometimes do, occurred a few years ago in the new plantations made by order of the Crown in Dean Forest, Gloucestershire, and in the New Forest, Hampshire. Soon after the formation of these plantations, a sudden and rapid increase of mice took place in them, which threatened destruction to the whole of the young plants. Vast numbers of these were killed, the mice having eaten through the roots of five year old oaks and chesnuts, generally just below the surface of the ground. Hollies also, which were five or six feet high, were barked round the bottom; and in some instances the mice had crawled up the tree, and were seen feeding on the upper branches. Various plans were devised for their destruction; traps were set, poison laid, and cats turned out; but nothing appeared to lessen their number. It was at last suggested that if holes



were dug into which the mice might be enticed or fall, their destruction might be effected." These holes were made in Dean Forest about twenty yards asunder, and from eighteen to twenty inches in depth, hollowed out much wider at bottom than at the top; so that the animal when once in could not easily get out again. In these holes at least thirty thousand mice were found in the course of three or four months, and it was calculated that a much greater number were taken out of the holes by weasels, owls, magpies, &c. The food of the field-mouse is exclusively vegetable, and hence it is highly important to the farmer to prevent its increase.—*New England Farmer*.

### TREES.

A tree is one of the most elegant objects in nature. Beautiful in its youth, luxuriant and graceful in its growth, majestic and noble in its later years. The mighty oak having withstood the storms of many centuries, still offers its unbending head to the tempest. It has seen the rise and fall of many of the human race, and man's most magnificent works have crumbled, but still it flourishes, and every returning spring clothes it with fresh verdure. The same olive trees which, in the days of our Saviour, gave name to the Mount, are still believed to exist. What interesting historic scenes have they witnessed.

"The cedars wave on Lebanon,  
But Judah's statelier maids are gone."

Napoleon in laying down the plan for his great road over the Simplon, is said to have diverged from a straight line to avoid injuring the great cypress of Somma, in Lombardy. This tree is treated by the inhabitants with great reverence, as it is supposed to have been planted in the year of the birth of Christ. But an ancient chronicle of Milan proves it to have been a tree in the time of Julius Cæsar, 42 B. C. It is 123 feet high, and 20 feet in circumference at one foot from the ground. Much larger trees are known to exist, but their age, although supposed to be greater, is not known.

But if trees are so beautiful as well as useful, and so enduring, why do we so much neglect their cultivation? Do we expect they will spring up around us without being planted? Magnificent forests have till so recently covered our whole country, that we have not looked upon trees for mere show and beauty than thirty feet, with wide extending branches.

Were more attention given to the cultivation of trees for adorning our residences and affording us their fruit, it would make home more pleasant, and tend to check our roving propen-

sities. In the language of the lamented Downing, "Our peculiar position in a new world that requires a population full of enterprise and energy to subdue and improve its vast territory, has, until lately, left but little time to cultivate a taste for rural embellishment. But in the older States, as wealth has accumulated, the country become populous, and society more refined in its character, a return to, and fondness for, those simple and fascinating enjoyments to be found in country life and rural pursuits, is witnessed on every side.

As they require some years for their growth, it seems very uncertain whether we shall ever live to enjoy the fruits of our labors, and as we are such a moving people, might we not ourselves, or at least our descendants, be in Iowa or Oregon before trees of our planting would attain a moderate size, and they would pass into the hands of strangers.

An old gentleman, who has within the last ten years set out a number of trees, repeated to us the old story that "he never expected to live to enjoy the fruits of his labors." But upon inquiry he admitted that he was amply repaid for his trouble, not only in the pleasure of seeing them grow, but by the fruit which they annually produced. We even now begin to look with some self-congratulation on the success of our own labors in this department.

To this innate feeling, out of which, grows a strong attachment to natal soil, we must look for a counterpoise, to the great tendency to constant change, and the restless spirit of emigration, which forms part of our national character, and which, though to a certain extent highly necessary to our national prosperity, are, on the other hand, opposed to social and domestic happiness. The love of country is inseparably connected with the love of home. Whatever, therefore, leads man to assemble the comforts and elegancies of life around his habitation, tends to increase local attachments and render domestic life more delightful, thus not only augmenting his own enjoyment, but strengthening his patriotism and making him a better citizen. And there is no employment or recreation which affords the mind greater or more permanent satisfaction than that of cultivating the earth and adorning our property. "God Almighty first planted the garden; and indeed it is the purest of human pleasures," says Lord Bacon. And as the first man was shut out from the garden, in the cultivation of which no alloy was mixed with his happiness, the desire to return to it seems to be implanted by nature more or less strongly in every heart—while there is no more rational pleasure than that derived from these pursuits by him who

"Plucks life's roses in his quiet field."

The enjoyment drawn from it, unlike many other amusements, is unembittered by the after

recollection of pain or injury inflicted on others, or the loss of moral rectitude. In rendering his home more beautiful, he not only contributes to the happiness of his own family, but improves the taste and adds loveliness to the country at large. There is perhaps something exclusive in the taste for some of the fine arts. A collection of pictures, for example, is comparatively shut up from the world in the private gallery. But the sylvan and floral collections, the groves and gardens which surround the country residence for the man of taste, are confined by no barriers narrower than the blue heavens above and around them. The tastes and the treasures gradually but certainly creep beyond the nominal boundaries of the estate, and re-appear in the pot of flowers in the window, or the luxuriant blossoming vines which clamber over the porch of the humblest cottage by the way side.

*Exchange.*

**FINANCIAL AND COMMERCIAL.**

**TOBACCO INSPECTIONS AND STOCK.**

We are indebted to Messrs. JOHN JONES & Co., of this city, for the following comparative statement of the inspections for the two last years, and of the stock now in the warehouses of this State. The inspections are official and of course accurate. The statement of Stock is conjectural; but from the experience and information of Messrs. J. & Co., may be relied on as not far from the mark:

	Tob'co inspections in Virginia.	Estimated Stock, in Warehouses.
	1855.	1856.
Sept. 30th, 1855.		
Richmond, .	29,458 hhd.	36,695 hhd.
Petersburg, .	13,348 "	15,675 "
Lynchburg, .	9,511 "	8,720 "
Clarksville, .	3,122 "	2,126 "
Farmville, .	2,211 "	2,106 "
Tye River, .	227 "	15 "
Danville, .		20 "
	57,872 hhd.	65,359 hhd.
1856—October 1st—Stock for inspection at Richmond,		7,600 hhd.
" " —Stock probably held for sale at Richmond,		900 "

*State of the Market.*—An active demand for all qualities. Prices have advanced in a week, on an average, one dollar and fifty cents per hundred. Probable production of the crop in Virginia the present year, 40,000 or 45,000 hhd.; more than half cut unripe, or injured by frost.

JOHN JONES & Co.

Richmond, October 1st, 1856.

We gather from the estimates of Mr. JONES some further facts which are of interest to the public generally. The Tobacco manufactured in this city, and elsewhere in Virginia, and shipped through this place—say from the 1st of October, 1855, to the 30th of September, 1856—including loose parcels, may be estimated at 36,000 hhd., yielding in packages of manufactured

tobacco 324,000 lbs., of average value per package of \$20, or a total of \$6,480,000  
Stems from Tobacco manufactured 8,500 hhd., at \$25 per hhd., 212,500

Realized by manufactured Tobacco and Stems, \$6,692,500

Foreign exports of strips and Tobacco in hhd., for one year (1855-'56,) 20,500 hhd., at an average value of \$120 per hhd, 2,460,000

Coastwise exports of Leaf and Lug Tobacco, 10,000 hhd., at an average value of \$100 per hhd, 1,000,000

Total estimated value of Tobacco shipped from this port for one year, \$10,152,500

This is a handsome exhibit for the Tobacco trade of this city. There is much Tobacco manufactured in the Dan River valley, that is wagoned off to the Southern interior; and there is a portion of that manufactured in and beyond Lynchburg, which passes by Petersburg.

It is a moderate estimate to assume that this great staple, which is used in its different forms by all civilized and nearly all the barbarous nations of the Globe, brings into this State annually \$15,000,000. This is a very respectable result from one staple of a district of country not very large, lying partly in North Carolina, but chiefly in Virginia.—*Richmond Dispatch.*

**WAGON COVERS—EVERY FARMER HIS OWN MANUFACTURER.**

Take about eight yards of Hadley Falls unbleached 5-4 sheeting, which can be bought at about 13 cents per yard, cut it into two pieces and sew it firmly together, as for a sheet—this kind is mentioned because it is very strong and thick,—then tack it up on the sunny side of the barn and paint it over with the same mixture as for the hay covers stated in your paper last week. When dry take it down and sew stones into each corner of proper weight, say about one pound or more each, and it is completed. By throwing this simple affair into his wagon, on leaving home in the morning, the farmer would be able to load up his hay if he saw a shower coming, and might stay to help his men rake up the balance instead of driving off his horses at the top of their speed and perhaps not reach home before he is caught in a pouring shower, and is obliged, the next day, to back his load out to dry his hay over again. One such instance would pay the cost of a cover, which need not cost over \$1 25 to 1 50. The same cover would enable him to take his grist to the mill on rainy days, which is a great saving of time, as safely as if he owned a covered wagon.

C.



## KHAIN CATTLE AND THEIR CROSSES.

*Holkham, Albemarle, Sept. 26, 1856.*

DEAR SIR,—A considerable number of the readers of your paper requested me to give my views of the Khain Cattle and their crosses, after I had tested them sufficiently to form a correct opinion. The imported bull, very soon after his arrival at my farm, became impotent, and I got from him but four calves, two half-blood males, which I have exhibited at our State Fair, and two females, one full blood, the other half blood. They produced each a very fine male calf last summer by Hon. Wm. C. Rives' thorough bred Durham bull, Red Rover, from Mr. Morris's of New York—all of which I intend to exhibit at our next Fair.

The full blood is what would be considered a fair milker, giving now, ten quarts of milk per day. The half blood sixteen quarts—a large amount for a heifer with her first calf. This heavy flow of milk may possibly be accidental, but I am inclined to believe that the calf with any good milk stock will turn out well. Dr. Davis, who selected the cattle for Lieut. Lynch, told me that they were almost invariably good milkers, in a climate intensely warm where they subsisted, the greater part of the year by browsing.

The full blood, though very active, are two slender, not having sufficient strength. My half blood bulls I have broken to work, and they perform admirably, possessing enough power combined with remarkable activity—moving with the speed of horses. Their red color, which they generally impart to their offspring, is also quite a desideratum with the lover of the "beautiful." Mr. Philip St. George Tucker and others who procured from me bull calves at the last Fair, speak in high terms as to their thriftiness, hardiness, &c.

Crossed upon good stock the progeny must prove all we can desire in oxen for work, and if they possessed no other good quality, this alone would sufficiently recommend them. I will have at the Fair a few calves for sale.

Faithfully yours,

JOHN R. WOOD.

Frank G. Ruffin, Esqr., Richmond.

## IMPORTANT TO WHEAT GROWERS IN NORTH CAROLINA.

At the meeting of the Scientific Association in Albany, this summer, some private conversation ensued upon the comparative merits of the grains grown in the West, North and South. It was observed that Southern flour had largely the preference in the West Indies and South America, on account of its being dryer and keeping better in hot climates.

A gentleman who attended the World's Fair in London, at once remarked that the finest flour he ever saw was made of North Carolina wheat, and ground at mills in New York. Being solicited to submit the observation to writ-

ing, Dr. Elwyn, of Philadelphia, well known for the interest he takes in agriculture and every thing connected with the useful arts, at once drew up a certificate, of which the ensuing is a copy:

"I have been desired, by Dr. Gibbon of North Carolina, to record the following fact as interesting to the wheat-growers of that State. While acting as chairman of the committee 'on articles used as food,' during the exhibition at the Crystal Palace, I was struck with the quality of the bread offered for examination by Hecker & Brother of New York. It was the whitest and best I ever saw. I asked—being a farmer—the very natural question, as to where they procured their grain; and was told that the bread was made of flour from North Carolina wheat; and to my further astonishment, was also informed that, in their opinion, the best wheat in the United States was that of North Carolina.

(Signed.)

A. L. ELWYN.

Albany, N. Y., August 25, 1856.

## BLANKETS FOR NEGROES.

"One blanket, such as planters usually buy for negroes, will cost \$1 40 and will last about one year. Six yards of kerseys at 28 cents per yard, (\$1 68,) will make a warmer blanket and will last five years. I know this from experience. Other reasons besides economy recommend kerseys as a substitute for blankets. The former are manufactured in the South, and of one half cotton and mostly of Southern wool, while blankets are made at the North and of Northern and Western wool.—*American Cotton Planter.*

## THE GROWTH OF THE WHEAT PLANT.

BY CUTHBERT W. JOHNSON, F. R. S.

On some former occasions, we have examined together many of the phenomena which attend the growth of the wheat plant. In the last number of the *Journal of the Royal Agricultural Society of England*, Professor Buckman has pursued the same interesting research; and at no period of the year can we, perhaps, again examine the subject more usefully than on the very verge, as it were, of wheat seed-time.

The choice of the seed is a primary question; it is here that in our cultivation we deviate, as we too often do, from nature. The seeds of the wild wheat, except in a few instances, are sown where they are ripened; unless carried by the winds or by animals, they are reproduced for a series of years on the same soil; in consequence, the plant yields small seeds—perhaps degenerate. The farmer avoids these ill results by changing the soil; by carefully manuring his land; and by varying his seed. He notes, too, that in this alteration of seed, certain facts, with regard to the new wheat, are beneficially to be regarded. In his prize essay, the Professor has alluded to some of these, and especially to the

practice of the Gloucestershire farmers; he observes (p. 183.) "That seed wheat should always be chosen from a poor soil for the seedling of a richer one, and from a cold climate for cultivation in a warmer; by acting contrary to this rule, we induce disease and a shortness in the yield. In Gloucestershire the hill farmer chooses seed from the exposed chalk Wolds of Wiltshire, while the vale farmer procures his seed wheat from the hills. But in the same manner as spring wheat may be cultivated into a winter variety, so may any kind of wheat become acclimatised by careful cultivation; this, however, sometimes entails a slight change of form; and hence have arisen tall and dwarf varieties, early and late forms, and numerous others. "New varieties of wheat," adds Mr. Buckman, "are constantly becoming the fashion with the agriculturist; but it must not be concluded that this is the result of caprice, as it is the nature of derivative plants to lose some of their qualities after a long career of changes, and hence varieties are always useful as a change, and the more distinctive these are, if adapted for our soil and climate, the better."

The *variety* of the seed wheat, however, is not the only very material consideration; the prevention of disease in it has long engaged the farmer's attention. He strives, and commonly successfully, to prevent blight, by immersing the seed wheat in brine, or solutions of sulphate of copper, &c.; the beneficial effect of which he is used to attribute, perhaps with correctness, to the fact that these substances kill the minute sporules or seeds of the fungi which have attached themselves to the seed wheat, and are the origin of the parasitical fungi which constitute blight. "But my own experiments upon this subject, together with careful investigation," remarks Professor Buckman, "seem to warrant the conclusion that the beneficial action of these steepes depends upon their destroying the germinating power of malformed and diseased seeds;" and he recounts some experiments which, he thinks, show that the pickling of wheat destroys the seed so as to prevent germination when the seed is diseased or ill-formed; but that if perfect seed were always employed, no pickling is at all necessary, it being perfectly true that a diseased progeny must result from an imperfect stock in plants as well as in animals.

The depth at which the seed is most beneficially placed, is a question not in general very carefully regarded. If we follow Nature here, we shall find her seeds mostly dispersed or germinating at, or close to, the surface; and it has been shown, in the case of some kind of seeds, that if shaded from the direct rays of the sun, they germinate, when thus placed, better than in any other situation. As, however, with our field operations, it is not possible to leave seeds thus exposed to their various enemies, and as it is necessary to cover them with earth, the next enquiry that promises to be interesting is (still

confining our attention to the wheat plant) what depth from the surface happens to be practically the best? Now the experiments of Buckman and of Petri seem to concur in placing the depth at from one to two inches, as that possessing the maximum advantage. The result of the experiments of Petri will be seen in the following table, which gives the result of sowing given quantities of wheat at different depths:—

Seed sown to the depth of	Came above ground in	Prop'n of plants that came up.
$\frac{1}{2}$ inch.	11 days.	$\frac{7}{8}$
1 "	12 "	all
2 "	18 "	$\frac{7}{8}$
3 "	20 "	$\frac{3}{4}$
4 "	21 "	$\frac{1}{2}$
5 "	22 "	$\frac{3}{8}$
6 "	23 "	$\frac{1}{8}$

Here we may observe that the number of seeds which produced plants decreased in number, as the depth beyond one inch increased; and we well remember some experiments by which it was shown that some barley followed a similar progressive rule, until when sown at a depth of twelve inches, it entirely ceased to produce plants.

And if the depth materially influences the growth of the seed, so also, as the farmer is well aware, does the period of the year in which they are sown. But although we possess this general knowledge, yet, until the experiments which I am about to describe, we had none which gave the result of sowing the same wheat on the same soil in each month of the year. In the trials by Professor Buckman, he sowed in 1851 and 1852 red Lammas wheat in plots, on the 14th of each month, from June 1851 to May 1852; the results he has thus tabulated:—

	Height.	Length of head.	Remarks.
1851.	ft. in.		
June. .	3 5	3	Clean straw.
July. .	2 10	2	Ditto.
Aug. .	4 1	4	Ditto.
Sept. .	3 11	4	Ditto.
Oct. .	3 10	4	Rather blighted.
Nov. .	3 9	4	Ditto.
Dec. .	3 10	3 $\frac{1}{2}$	Much blighted.
1852.			
Jan. .	3 10	3 $\frac{1}{2}$	Ditto.
Feb. .	3 6	4 $\frac{1}{2}$	Ditto.
March .	—	—	} Failed as a crop, but some ears ripened.
April .	—	—	
May .	—	—	

The summing up of Mr. Buckman I have abbreviated in the following paragraphs:—

The winter was mild and wet—all the samples were gathered in August. One chief difference between winter and spring wheat is,



that winter wheat sends out new roots and fresh fibrils in the spring, and at the same time tillers, and forms tufts, each shoot of which also roots like the central blade, and all this second growth occurs just when spring wheat is coming up. In spring wheat there is little disposition to tiller: as the growth is quick, the root has no period of rest, and therefore its fibres and fibrils are developed regularly, and have no fresh impulse of growth like wheat that has stood the cold of winter, and is prepared to meet the milder season of spring with an invigorated constitution, and an appetite that requires new roots and fresh rootlets to supply. It is on this account that winter wheat can be transplanted in spring with but little check to its growth, and even the tufts can be divided into slips, which is indeed a useful mode of augmenting our crop in experiments upon new and rare varieties. The seed having been sown as evenly as possible at the required depth, the following changes take place:—The grain begins to obtain moisture from the soil, and consequently enlarges its size. In a few days the embryo shows a great change; it has become enlarged—the lower part soon protruding as a rootlet—the upper as a bud, which will quickly develop leaves. Coincident with this proceed the chemical changes in the cotyledon, from which the germ is supplied with its food, until the roots on the one hand, and the leaves on the other, become capable of acting—the one as purveyors, and the other as eliminators of that food with which the plant may be surrounded, in the soil and in the atmosphere, and upon which depends its after welfare. If wholesome food for the plant be in the soil, it progresses favourably: if the reverse, disease or death will be the result. If the supply of these be insufficient, the produce is small: if too great, we get blighted leaves and straw, with too small a proportion of corn. If bad seed be sown, we have a diseased and malformed plant, resulting in their diseased and consequently blighted grain. All this, however, depends upon the air the plants get to breathe: if full of noxious vapour, they die; a small quantity of such gases as sulphuretted hydrogen, sulphurous-acid gas, and muriatic-acid gas, acting as a poison, and thus preventing wheat from being grown in the vicinity of some chemical and manufacturing works.

The nature of the food which the wheat plant derives from the soil, is known to materially influence the composition of the plant and the seed. Thus Hembstaedt long since found, by some experiments with wheat dressed with different manures, that when wheat, which was grown on land without any manure, yielded 9.2 per cent of gluten, that it yielded, when dressed with

Vegetable matter, . . . . .	9.6 per cent.
Cow dung, . . . . .	12.0 “
Sheep dung, . . . . .	32.9 “
Night soil, . . . . .	33.14 “

The constituents of these decomposing applications are assimilated by the plant either in the gaseous form, at the moment of their extrication, or when they are dissolved in the moisture of the soil. It would seem, then, that a more extended and varied examination of the moisture of the same soils in their simple state, and when dressed with various manures, might be productive of useful results; and this has been, although but partially, accomplished by Professor Way, when he was examining the drainage waters from the rich hop-grounds of Surrey and from other lands; and if we regard the composition of such drainage waters as affording a tolerably fair view of that of the moisture retained in the surface soil, and from which the wheat plant derives at least the mineral portion of its food, then it is interesting to compare the composition of the mineral substances or ash of the wheat plant with those contained in land drainage water.

Now in the following table will be found,—I. The substances found in 100 parts of the seed; II. of the straw and chaff of some Hoptoun wheat (*Jour. Roy. Ag. Soc.*, vol. vii, p. 631); and III. and IV. the matters (given in grains) contained in an imperial gallon of two (previously filtered) drain waters, from two fields on the land of Mr. Paine, at Farnham, in Surrey, (*ib.* vol. xvii, p. 133):—

	I.	II.	III.	IV.
Silica, . . . . .	5.63	69.36	0.95	0.45
Phosphoric acid, . . . . .	43.98	5.24	trace	0.12
Sulphuric acid, . . . . .	0.21	4.45	1.65	5.15
Chlorine, . . . . .	—	—	0.70	1.10
Lime, . . . . .	1.80	6.96	4.85	7.19
Magnesia, . . . . .	11.69	1.45	0.68	2.32
Peroxide of Iron, . . . . .	0.29	0.73	—	—
“ Alumina, . . . . .	—	—	0.40	0.05
Potash, . . . . .	34.51	11.79	trace	trace
Soda, . . . . .	1.87	—	1.0	2.17

Here, then, we find all the chief mineral constituents of the wheat plant, in the water of a cultivated soil; and in the same land-waters were found, in each imperial gallon (*in grains*):

	Soluble organic matter.	Nitric acid.	Ammonia.
I.	7.0	7.17	0.018
II.	7.40	14.74	0.018

It is one satisfactory result of the examination of these drainage waters, that the substances they carry away from the soil are not so very material in amount as at first sight we might be led to suppose; for as Mr. Way remarks, “It is to be remembered that, as the drains are at a depth of from four to five feet, all the soil to that depth is concerned in furnishing the substances which we find in the water. Assuming that a superficial inch of soil over an

acre to weigh 100 tons, and that the drains lie at only 40 inches from the surface, we shall have 4,000 tons of soil subject to the solvent action of the water; and we shall find by calculation that the quantity of potash removed from the soil in the year by drainage, would be represented by the decimal '00001 per cent, that is to say, that if the whole of the soil were analyzed before and after this quantity (7lbs. per acre) was removed, there would be found no greater difference in one hundred grains of soil than the one hundred-thousandth part of a grain.

These examinations will hardly fail to interest those of my readers who have considered the mode in which plants absorb their food from the soil or the atmosphere by which they are surrounded; and all such laborious steps, by which we increase our knowledge of the movements of organic bodies, assuredly tend to place our most practical efforts on a better, since upon a more intelligible foundation.

*Farmer's Magazine.*



## THE SOUTHERN PLANTER.

RICHMOND, NOVEMBER, 1856.

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In accordance with the notice given in a previous number of this paper, we commenced with the July number to drop from our list, all subscribers who are in arrears for three years or more, and shall continue to do so until the first of January next, at which time we intend to drop all who are then in arrears for two years and upwards. But in doing so we do not intend to relinquish our right to collect our dues from such delinquents, but shall send out their accounts regularly or place them in the hands of Agents for collection. We do not design to adopt *strictly* the *cash system*, but we desire to approach as near to it as possible, and wish our "Terms," which are printed conspicuously in every paper to be understood by *all* our subscribers. They are as follows:



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## WANTED

January and September numbers of the Planter. Subscribers who do not preserve their papers for binding, and who have either or both of the above numbers will confer a great favor upon us by forwarding them to this office.

## THE SOUTHERN PLANTER BOUND.

In reply to numerous enquiries on the subject, we state that we can furnish the "Southern Planter" bound, at \$1 50 per volume, postage included.

## FALL PLOUGHING.

There are some sorts of land that do not require to be ploughed in the fall or early winter. Sands or sandy loams that crumble under the operation of the plough, are of this character. So are undrained clays; especially those pipe elays that "run together," as it is termed, or become glazed after every spell of freezing and thawing. In the case of the sandy soils, their free, open texture is supposed to expose them to the injury of leaching rains on the one hand, and to the ill effects of evaporating winds on the other. In the case of the undrained clays, the water penetrates and bakes them, at the same time that it is more easily admitted through the ploughed surface to the subsoil, where, below the reach of evaporation, and only capable of being removed by the slow process of capillary attraction, and the still slower one of filtration through an almost impervious medium, it remains until a late period, keeping the land moist and cold, retarding the spring's operations—including a second ploughing,—and inviting late frosts. To plough this latter soil undrained, is in fact to increase the labour of cultivating it, and diminish the amount of crop it may be capable of yielding.

But on well drained elays, or on elays which require no draining, on all lands, in a word,

which the owner's observation has taught him crumble down into fine pulverization under the action of frost, there is no operation more important than a winter or fall ploughing. To talk of manuring a whole cornfield at the South—where large breadths of land are annually cultivated—with all the accessories the most fortunate or most skilful can command, is an absurdity: it cannot be done. But on pulverulent clays remunerating crops may always be had in tolerable seasons, if an early ploughing and a favorable winter shall operate to produce the finest tilth. Without going into the question, which Jethro Tull is said to have raised, as to whether proper culture would not supersede manure, we may assume as within every practical clay farmer's observation that it is almost equal to a manuring, at least for the time being, of his whole field, to get it thoroughly disintegrated. This affords an infinitely multiplied extent of superficies in the pulverized mould to the chemical action of the gases we call "the air." If this be true, then it is plain that ploughing may, to a certain extent, substitute manure.

But this is only one of the benefits of winter ploughing clay lands. When they are properly bedded, and gripped, and ditched, it drains them; and each judicious repetition of the process is a step towards this important object. We were somewhat surprized to see lately in the Genesee Farmer,—a paper whose editor is generally a safe guide—and always reliable—an extract from an address of a Mr. Denton, an English draining Engineer, in which he said that land could not be drained by water furrows and grips, inasmuch as he had seen water standing some few feet from one of these surface drains. So he might: and so have we; but on land drained in that way, we have also seen some of the heaviest wheat crops at harvest, and some fine corn at midsummer. We have also seen water enough running from a few grips to turn a mill, on land that but the year before was so ponded that boys could skate on the ice that was formed; and we have seen the growth on this same land changed from broomstraw, hengrass, and running briars to hog-weed, (or earrot-weed,) careless, and, in a few places, Jamestown weed, without the application of any other manure than two hundred pounds of guano to the crop of wheat which followed the first draining and ploughing. Now if taking off a two inch fall of rain in sluices like mill tails is not draining, we

don't know what is. To plough land in the fall or early winter then, is to drain it: provided it be properly bedded and gripped. To perform these operations properly it is necessary, we think, (though on this point, as being under experiment with ourselves, we would speak guardedly,) that where bedding is required, the lands or beds be not less than twenty feet wide, that they be twice gathered up from the flat, and that, if once properly located, they should never be reversed; but, when of sufficient height, be ploughed across, sweeping out each water furrow with the plough, cleaning out the grips with the road scraper, so as to deposit the excavated earth some distance from the graded margin of the grip, and leaving the field in precisely such condition as if a crop of wheat had been sowed on it.

In the case of beds of sufficient height, when it is intended, as on such land it generally should be, to cultivate corn with the plough, to the exclusion of the level mode of culture, it will answer perhaps as well to throw up the corn beds in high narrow ridges of five feet in width, or less, according to the desired breadth of the corn bed. But a still better plan, when practicable, is to throw it up into steep and narrow lists like the roof of a house and just as steep as the plough will make it: thus,

△   △   △   △   △   △   △

This will necessarily give a more thorough pulverization than any other means, and we believe is well worth any extra labour it may be supposed to require. Thoroughly worked in this way in winter, the lists pulled down in the spring by a cultivator drawn deeply across them, with oats harrowed in or drilled, or, in the case of corn, a second list formed with three furrows and the corn planted on the top of it, the cultivator of clay land will be astonished at the superior product he will have gained.

Supposing one or more of these processes to have been complied with, we shall find, as another resulting benefit, that we can plant such land earlier in the spring, because it will be drier, warmer, and freer from frosts.

The economy of work too, will be even greater than its forwardness. A good stand of corn is much more apt to be secured, always a difficult matter on cold clays, and a great deal of replanting will be saved; the crop will have been half worked when planted; and with a good corn planter, of which there are several, (Emery's, made in Albany, and sold by Branch & Sons,

Petersburg, and by Palmer in Richmond; or Sinclair's, made *best*, by Baldwin & Cardwell in Richmond, we will warrant in good hands,) with a good corn planter, we repeat it, or two if need be, a few hauls may plant the crop, whilst the balance may be hauling out manure, fencing, or doing any other of the many things that crowd upon us at that busy season.

The depth at which the land should be ploughed, is a matter that must be left to the discretion of the judicious cultivator. It is objected sometimes to a deep furrow that it brings up to the surface noxious substances which the subsoil has contained, and mixes them with the soil; or that it covers the mould that may exist on the surface with the barren subsoil. If the land be properly ploughed we do not entertain much dread of either. In clays there is almost always a homogeneous constitution of soil and subsoil, with, sometimes, an amount of filtrated matter in the latter, that is an improvement to the surface. As to the barrenness of the subsoil, that cannot be an objection if the land be not turned over in flat furrows so as to place the mould at the bottom. Ploughed so as to lay such furrow slice on edge, or at an angle of forty-five degrees, the subsequent preparatory tillage will mix them thoroughly, whilst the frosts will have opened, and the air have mellowed and enriched, the bottom of the furrow.

The advantages of deep ploughing have been too often discussed to need repetition here. Suffice it so say that unlike wheat, the constitution and habits of corn require a deep, moist, mellow soil, and that the reason of its growth being in the heat of summer, when moisture is too readily evaporated, and when any excess is taken up and appropriated by the large, greedy, evaporating blades, it is hard to plough too deep for it on clay lands that are *well drained*.

Lands thus cultivated will, of course, stand a drought much better than those ploughed in the spring, when it is impossible by any amount of harrowing, and rolling, and clod crushing even, to reduce the clods to the fine tilth that the expansive properties of freezing water, penetrating the whole mass and opening every pore, are obliged to give. Every atom of soil is in a condition to absorb and supply moisture to the thirsty plant, to absorb it not only from rain and dews, but from the air which in summer is always surcharged with vapour.

And finally, not only is the crop benefitted,



but the land is also in the best condition to improve, to receive besides moisture, the air and the gasses, as we have remarked; and thus to undergo those changes in its condition if not its constituents, which make, what we call, improvement in soils, changes which science had not yet been able to explain, to follow, or to imitate. It is hardly necessary to add that when manure is applied to a tillage crop, the above condition is the best possible to receive it.

We say then, to the clay land farmer, plough your land early enough for the frosts to act fully on it; plough it deep enough to secure the present advantages of frost and aeration, and the future ones of a reservoir for moisture, and a capacity for continued amelioration; and drain it by bed furrows and by grips well cleaned out a little deeper than the bottom of the plough furrows.

What number of inches make deep ploughing is not yet a settled point. We hear of twelve and fifteen inches much oftener than we see it. We think from seven to ten inches, rarely as much as the latter, is as deep ploughing as is usually accomplished, or as is desirable.

The subsoil plough in such lands as require surface drainage is an implement which we consider so dangerous, and of whose benefits after a review of the experience of many practical men, there is so much doubt, that we would advise a cautious, and, for a few years, an altogether experimental use of it.

If the above shall be considered hard work, remember that it is labour saving in the end; and if your teams are not sufficient, get more of them. There is not one farmer in twenty in cismontane Virginia, who has much more than half horses enough.

#### THE AMERICAN FARMER.

We take occasion to say in reply to the American Farmer for October, that the failure to give credit for its excellent article on FREE ACID IN SOILS was accidental, and the fault of the printer. Whether there be or be not free acid in soils, is, we think, a distinct question from the theory that free acid in soils produces or promotes the growth of sorrel. To that theory we have been a convert; for we have seen on some of the best lands in Jefferson, that had failed to shew any improvement from lime, a luxuriant growth of this very plant: and the land on our late Shadwell farm from which,

when it was in tillage, we preferred to save our seed wheat, from the superior sample it always gave, was a river hill which never failed to produce a growth of sorrel when the clover did not take.

In two other matters we are sorry that we cannot agree with the editors of the American Farmer, to wit: the Agricultural Department at Washington, and their views on "An improved system for a Cotton Plantation."

The first of these it is unnecessary to notice now, as Mr. Fremont *may* be elected, and render the discussion unnecessary at any time.

As to the second, it may be very true, and in many places at the South, it, no doubt, is true, that one luxuriant crop of peas may restore the waste of the three preceding tillages. Potatoes—sweet are meant—are not an exhausting crop, but rather an improver as far as our information extends; and oats, so far from impoverishing land, in the majority of cases where we have heard of their being fairly tested, are likewise rather an improving crop, and will bear successive cultivation on the same land for several years without diminution of product. This may contradict theory, but it is fact.

The fact that land has "five regular ploughings in three years," is not necessarily adverse to good farming, or a proof of defective rotation. The Editor's remarks occur on page 123. On page 124, they extract from The Southern Farmer the very interesting account of Mr. E. R. Turnbull, of Brunswick's, farming with pea fallow, in which it appears that he has ploughed his land eight times in four years, or sixteen per cent oftener than the case treated, with manifest advantage. We ourselves published, last summer twelvemonth, an account of the results obtained by Mr. Mathews, of Chickahominy near Richmond, who had ploughed his land twelve times in six years, i. e. twice annually, and by a pea fallow on the stubble, in six years' successive cropping, without manure, rest, clover, lime, or any other appliance whatever, had run up by steady annual increase from seven bushels per acre to twenty five, being an average annual increase of sixty per cent.

Mr. Mathews gave \$25 per acre for his land, and has recently sold it for \$50; so he had not hurt it much. The subject of this experiment, about the poorest land he had, besides paying a handsome dividend intermediately, gave back

double its price in the sixth year. We have lately passed through his corn field, a portion of similar land, which had been "laid by" with peas for the last three years of successive cultivation, and though it has not escaped the common disasters of drought and chinch bug, the growth of stalks showed that it had "cut out" for an eight barrel crop.

We have heard a case of a farmer in a tide water country, who cultivated the same land in corn every year of his long life, making an annual average of six barrels per acre, whose only peculiarity was sowing peas at the last working. We know a gentleman who, on stiff land, cultivated a lot in corn for eight years with peas sowed at the last working, in the baulk, and turned in when in full bearing, and made fine crops all the time.

Instances to the same effect may be seen in Mr. Edmund Ruffin's account of the pea culture of North Carolina in his essay on peas.

This may be bad "rotation," but it is good farming, if profit be the test. It is a rotation we do not pretend to recommend, because it will not suit all lands, because economical considerations, very distinct from principles of rotation, may and will interfere to modify this or any other system. We state these facts as cases in point, to prove that we should not conclude that "an improved system for a cotton plantation" is necessarily bad because it makes one crop of peas pay for three years' exhaustion, and requires "five regular ploughings in three years."

#### ABANDONMENT OF FARMS IN NEW ENGLAND.

The following extracts from two letters lately written by Mr. Brown, the editor of the *New England Farmer*, and published in a late number of that paper, exhibit a state of things with which the agricultural prospects of Virginia contrast most favourably. Here we are annually opening up and improving thousands of acres, and restoring fields—not farms—that have been exhausted and abandoned. All we want is an additional supply of negro labour to make the whole of lower Virginia blossom as the rose.

The rise in price of improved farms has kept pace with the progress of improvement; and we have already, instances in the interior, where no contiguity to city or market could

produce speculative or factitious value, in which the estimate of the commissioners of assessment has risen 800 per cent. in fifteen years.

"It is an incontrovertible fact that there are thousands of acres in Massachusetts, and tens of thousands in New Hampshire, upon which the energies of man should never be wasted. There are acres enough without them. There are acres without original fertility, on mountain tops, or sides, away from streams, or good roads, swept by rains, and scorched by summer suns. They are difficult of access to plough, manure and plant, or if, providentially, a crop is grown, to secure it. To persist in their cultivation is a contest between man and the powers of nature, in which the former will certainly come off second best. It has been going on now between one and two hundred years. The axe and fire has swept the noble forests from the hills, while innumerable crops of rye have taken up the virtues of the virgin soil, to which nothing has been returned. By removing the forests, the springs that ran among the hills have disappeared, and gradually, year after year, the rich, leafy mould has been taken up, until nought but a scanty and innutritious vegetation is left springing from a bleached, thin and inactive soil!

"Man, here, is yielding to natural, but inexorable laws. The gloomy records of his defeat are left upon the land. All along the way, occasionally in the valley, sometimes on the narrow plain, but mostly on the bleak hills, stand dreary monuments not only of his *defeat*, but of his *retreat*, also, from the unequal contest. In a brief travel of only one day, stand more than fifty deserted mansions to attest this fact! These are not the tenements of the first settlers, but the re-buildings of their descendants, never to be repeated: one, only, mostly demolished, showing the log structure of the pioneer. Here and there some careful hand has removed the dilapidated frame work, and the cellar only marks the spot of the habitation. In the other cases, no herds stand in their stalls, no smokes curl from their chimneys, and the grass—nature's beautiful covering where man mars—has overspread the pathway to the doors."

\* \* \* \* \*

"All around these once fair representatives of civilization, Nature is rapidly making encroachments; and there are unerring tokens of her impending approach. The clang of the anvil has ceased; the mill grinds not, nor saws, and the mountain stream babbles or roars along its unimpeded course. The majesty of State laws compels to a good condition of the public roads, though there are few to travel them. But Nature is on her triumphal march, and trenches upon these as well as the garden and the field. First comes the grass, like the atmosphere, determined that there shall be no vacuum in nature. It covers the fallows of husbandry, the deep cuts made for the avenues of trade;



spreads over and obliterates the art or skill of the landscape gardener, and claims a place or even superiority, with the exquisite flowers of the parterre. It is universal. Cattle graze and enjoy it, and minister to the wants of man.

But as the lion reigns supreme in the locality which he has inherited or selected as his own, and levels contributions over still wider circles, so there is a power behind the grass which shall not only supplant, but drive it from its realm. The forest approaches. Here and there where the decaying rock yields up its potash or its lime, fit food for the embryo plant, appears the pine, ash, oak, maple, beech, birch or walnut, and soon assumes the form and comeliness of a tree. Various shrubs mingle with them, whose innumerable leaves extract from the atmosphere its nutritive properties, and these cast annually, cover and protect the surface and supply nourishment to the roots of all. Forest trees take the lead, and as they gain superiority, the lesser plants yield, laying down their lives—a sort of vegetable martyrdom—for the general good; they were useful in life, and when done with that, still continue to sustain the living growth. Here is a new state of things. Man and his ways have disappeared. Nature has assumed the sway, and again clothed the earth in her primitive dress. The forest is everywhere, covering hill, valley and plain. Silence is in its dark courts, save when the thunder breaks over it, or the tornado prostrates it with its ferocious breath.

“Such is the course of Nature—to contend with her is worse than folly, being no less than a sacrifice of health, prosperity and comfort. Let her have these lands, and use them as she will. In thirty years they will be covered with trees fit for timber and fuel, and return a profit to their owners.

“In the mean time, if the proprietors of the more level and fertile lands wish to keep the native population at home, they must invite the mountain-men and cobble-stone-knoll-men into their districts, and give them employment in the numerous manufactories of one kind and another, or divide their rich lands with them for a fair compensation. These lands, under a higher state of cultivation, will produce well nigh as much as the whole do now, while the products of the forest will be a clear gain; an immense expense of fencing and road-making will be saved, the sparse population will be gathered into more compact communities, taxes of all sorts decreased, and the facilities for the transaction of business and the general welfare and happiness of all greatly promoted. If these things are not regarded, the emigration West will continue until scarcely a type of the original New England stock will be left, and the Shylocks who hold on to the better lands with penurious grip, will find themselves surrounded by those speaking other tongues, and in whose veins runs not a drop of their ancestral blood.

“The fiat has gone forth, and puny men can-

not check its career. Large portions of Massachusetts soil, and immensely larger of Maine, New Hampshire and Vermont will grow up to forest, in spite of furnaces and locomotives. England has passed through the same process. Even now, some of the old towns of Massachusetts, already settled more than two hundred years, have a great many more acres covered with wood than they had fifty years ago. In the introduction of scientific principles to his fields, the farmer's head now performs much that was once required of his hands. He tills less land, but the cultivation is more systematic and thorough, and when his crops are secured, they are expended with an economy little understood by his predecessors.

“Our travelling companion, JACOB B. FARMER, Esq., of Concord, Mass., is a gentleman of rare powers of observation; he confirms the views we have expressed,—states that he has travelled over the various routes we have now taken, more than one hundred and fifty times within forty years, and that he has noticed these desertions of the original homesteads through the whole time,—but that a large majority of them belong to the latter half of that period.”

\* \* \* \* \*

“In my last I spoke of the tendency of New Hampshire lauds to go back, first to grass and then to forest lands. A fellow-traveller, detained here, from Hillsboro', states that twenty farms in that town have been deserted, and probably will never again be occupied by man: while a resident of this place informs me that on a single mountain tract in this neighborhood, ten farms are deserted, and the buildings are in ruins! Such are the striking features all over this region of country.”

#### TO DESTROY FLY IN WHEAT.

If any of our readers have fly in their wheat this fall—a risk, by the way, which all good farmers run, as such *will* have their wheat sowed early if they possibly can—let them not forget to try the remedy proposed by our friend, the late Jas. A. Cochran, of Augusta, and sanctioned by his experience for several years.

It is simply to apply from one to two bushels of water-slaked—not air-slaked—lime per acre, to the wheat when the dew or other moisture is on the wheat, so that the lime will readily make a ley which will run down the groove of the blade to the nidus of the fly, or, as it *thou* is, maggot. The same application, made in the spring, if not found fully effective in the fall, Mr. Cochran found to rid him almost entirely of this pest.

The hands that apply the lime, may handle it with impunity if they will only keep their hands well greased. Mr. Cochran used small

tins, like the dippers used for sugar and coffee by the grocers, to scatter it. But on land that will bear the tread of horses a broadcasting machine will answer much the best purpose.

KEEPING SWEET POTATOES.

The best plan we have ever tried to keep sweet potatoes, for family use, is to pack them in layers in goods boxes of dry sand—dried, if necessary, on the kitchen floor. This will absorb the moisture from the roots and preserve them sound until early summer vegetables can be produced. A layer of dry sand and a layer of potatoes on that, with sand strewed among them; then another layer of sand supporting a layer of potatoes as before. The whole to be kept in a dry place.

The principle of keeping all roots is to exclude the pile from wet, and from rapid thawing after a freeze, to ventilate it partially, and to disturb it as seldom as possible. A dry bottom, a plank flue with holes bored in its sides and lightly stuffed with straw at top, a straw covering and about eight or ten inches of dirt *loosely* thrown up and *not* patted smooth with the spade, would seem to fill these conditions.

GRAVEL WALKS.

A correspondent of the Rural Intelligencer gives the following result of his experience and observation as the best way to construct Gravel Walks:

“First, dig the soil or lawn to the depth of six or eight inches; perhaps in deep soil ten or twelve. Second, fill in one half of the depth with small stones gathered from the surrounding grounds. Third, fill the remainder to the surface with sand and coal or wood ashes, *leached*, and near the surface spread an even thin coat of salt. Make use of the stone or iron roller as soon as convenient, but more particularly after every shower for two or three months. Your correspondent will in this way obtain a *clean* and handsome drive. The salt is very important in the mixture of sand and ashes. Anthracite coal ashes would be preferred, but the purpose can well be answered by making use of wood ashes, after leaching.”—*Cultivator*.

BREADSTUFFS.

Comparative trade of Richmond, in Breadstuffs for the years 1855 and 1856.

The following is a comparison of the receipts of this city in the three leading articles of the breadstuffs for the months of July, August and September of the present and last year. It will be seen that the receipt of Wheat the last three

months exceed that of the same months last year by the large amount of 231,485 bushels. Last year the farmers generally held back their crops for higher prices, and this accounts in a great degree for the excess the present year; but the crop this year is no doubt larger than that of last year.

The amount of Flour brought in during the three months is 1935 bbls. less than of last year. This may be owing to the want of water to enable the country mills to grind; but it is the opinion of some conversant with the subject, that the facilities of transportation, the demand for grain for the city mills, and the high prices paid by them, are taking the wheat from the country mills and diminishing their operations.

	Wheat.	Flour.	Corn.
July, 1856	- 68,210	2,056	14,667
Aug. “	- 415,980	13,614	28,772
Sept. “	- 245,680	15,639	29,313
	<u>729,870</u>	<u>31,319</u>	<u>72,752</u>
July, 1855.	- 25,547	3,287	7,836
Aug. “	- 352,737	14,827	13,931
Sept. “	- 120,101	15,140	6,620
	<u>498,385</u>	<u>33,254</u>	<u>28,393</u>

The following is a comparative statement in the inspections of Flour, in Richmond, during the quarter just ended, and for the same period of the three preceding years:

	1856.	1855.	1854.	1853.
Family, bbls.	1,897	2,294	2,004	2,033
Ex. Superfine, do	6,356	3,032	2,510	2,883
Superfine, do	117,835	110,681	95,933	84,614
do, half do	5,075	5,260	3,287	4,175
Fine, bbls.	3,158	2,478	3,137	3,433
Middling, do	14,348	8,045	8,856	4,732
Condemned, do	1,451	1,620	1,462	1,180
	<u>150,120</u>	<u>183,410</u>	<u>113,544</u>	<u>101,063</u>

*Richmond Dispatch.*

From the Genesee Farmer.

THE CULTIVATION OF ASPARAGUS.

The asparaginous class of esculents, (Doudon says,) may be considered as comparatively one of luxury. It occupies a large proportion of the gentleman's garden, often an eighth part, but enters but sparingly into that of the cottager. A moist atmosphere is congenial to the chief of them, especially to asparagus and sea-kale, which are sea-shore plants, and are brought to greater perfection in the British Isles than anywhere else, except perhaps in Holland. In the neighborhood of London it is cultivated to a greater extent than in any other place in the world; chiefly at Deptford and Mortlake. Some growers at these places, and especially Mortlake, have above one hundred acres each.

*Asparagus officinalis* is the common kind. There is, properly speaking, but one cultivated variety, although we frequently see other names given, as Giant, &c., which is said to be larger



than the common kind: but its increased size is owing, I believe, entirely to cultivation. I cannot see why asparagus should be a vegetable of luxury; it is one of the most wholesome, and ought to be one of necessity. It has other good qualities to recommend it. It is so easily cultivated, and when once established it requires only to be kept clear of weeds; though no plant is more susceptible of good treatment. It is also one of the earliest and most delicious of spring esculents, and lasting in season from the first of May to the middle of June, after which time none ought to be cut. In Paris it is much resorted to by the sedentary operative classes, when they are troubled with symptoms of gravel or stone. It is needless to say that the young, green stalk, when about six inches high, is in the best condition to be cut.

*To Make the Bed.*—Choose a deep, light, sandy, loamy soil, in the most sunny situation of the garden, yet sheltered from cold north east winds, if possible, and in a place where it can remain, for if well done it will last good fifteen or twenty years. It must not be shaded by any large trees. When the spot of ground is fixed on, draw on good rotten stable manure, at least six inches to one foot thick, for remember this is the only opportunity you will ever have to manure the bottom part of the bed. When the manure is spread, begin at one end by digging out the soil the whole width of the bed, and for four feet in length, and at least two feet or two feet six inches deep; when this is done, continue the operation by digging down the soil and manure to the same depth, turning and mixing them into the space from which the first was thrown, and so on the whole length of the bed. When you have worked through to the other end of the bed, there will necessarily be a hole left; wheel in the earth which was thrown out first at the opposite end, and that will fill it up. When this has lain a fortnight, if there be time, turn it all again, well mixing it as before; when this has lain a week or ten days, it will be ready to plant. Rake the surface of the bed smooth and even, then stretch a line across the bed six inches from the edge; then with a spade cut out a trench six inches deep and nine inches wide; then lay in the plants nine inches apart, spreading out the roots horizontally the whole length of the trench, and cover them over two inches deep, as quickly as possible. Plant the next row a foot from this, and continue the operation until the whole bed is planted. Beds five feet wide, with four rows in the bed, will be found the most convenient, with alleys two feet wide. When all are planted, rake the surface smooth, leaving the plants about two inches below the surface, and trim down the edges neatly with the spade. Plants of any age will do, although those of one or two years old are the best.

Asparagus is usually propagated by seed, but those who want but a little will find it cheaper to buy it of the nurserymen or gardeners whose business it is to raise it. Good plants can be

had for a dollar per hundred, or in quantities, cheaper. Two beds five feet wide and thirty feet long, will supply a family of five or six with a good dish every day. There ought to be none cut the first year, and but little the second, and none at any time after the 20th of June.

The best time for making the beds and planting, is October; but if very fine weather, November will do, or even early spring, providing the bed has been prepared in the fall. After all is plauted, if in the fall, just before severe weather is expected, cover the bed all over with long, littersy manure or leaves, eight or ten inches thick. In spring, when all the bad weather is gone, rake off the covering and fork up the surface of the bed lightly, being careful not to touch the plants. Rake the surface of the bed smooth, sow on a little salt and keep clear of weeds.

Rochester, N. Y.

J. SALTER.

#### THICK AND THIN SOWING OF WHEAT.

This is a subject on which much has been said and done, but that is still open for discussion and on which one could hardly expect ever to find an agreement in opinion, so much depending upon soil and situation, the state of cultivation in which it is found, the season, late or early, and the manner of depositing the seed, whether by drill, broadcast, or dibbling, or planting by hand by single grains: the mode in which the seed is covered; whether by heavy drag or light harrows, and above all other considerations, the state of the land with regard to its requirement in the article of drainage, for if the land be naturally wet, it is but fair to expect, that "of thirty grains of wheat sown in the fall, one only shall be found a plant in the spring." And yet, after this diversity of time, situation and circumstance, men are found who would fix the proper quantity of seed to be sown, and back their theories by experience. We knew a great and good man, a physician by profession, who spent the latter years of his life in travelling about at his own expense, to superintend in person the sowing of wheat, in a way that should require but about as many quarts of seed as is customary to sow bushels; while the Scotch sow twice the quantity of seed as do the English; as much as five bushels of oats per acre. When the land is light, warm, dry and in a good state of cultivation with a proper change of crop and an early season, would it not be fair to suppose that at least one half the seed usually sown might be saved, and with advantage to the future crop?

On the subject of early sowing, which

after all that has been said, may be considered of as much importance as anything that can be said, Jethro Tull has the following observations, which deserve very serious regard. "A wheat plant that is not planted early, sends out no root above the grain before spring, and is nourished all winter by a single thread proceeding from the grain up to the surface of the ground, and the worms can more easily find a thread or single root that extends by its length to five or six inches deep, than one which reaches but one inch; besides, the worms in winter do not inhabit very near the surface, and therefore miss the short threads or roots, but meet with the long, single ones. On rich land planted early, four gallons of seed drilled per acre may suffice, because then the wheat will have root near the surface during winter and tiller to the spring without damage from the worm and other accidents that late planted wheat is liable to."

*Boston Cultivator.*

#### THE WONDERS OF INDIA RUBBER.

Among the recent applications of India Rubber none are so remarkable as the manufacture of what is called "Hard India Goods," into which the rubber enters most largely. There is in New York a company called the Beacon Dam Company, which is devoted to the manufacture of this class of goods. By a process that originated with Mr. Chaffee, coal tar is mixed with the rubber, and the compound makes one of the most solid, elastic and elegant articles that can be found in the market. It resembles polished stone, is as black as coal, needs no finish, and has of itself as hard and exquisite polish as it is possible for any metal to bear. There seems to be no end to the articles to which it can be made. Canes of the most elegant form and appearance are constructed out of it, and are as tough as so much steel, while they have all the elasticity of whalebone. Cabinet work, inlaid and mosaic, ornamental to the parlor and the chamber. Spectacle bows and glasses for the eye, are made so light as to be no annoyance, while their elastic character cause them to sit firm to the head; opera glasses, castors, sand stands, ink stands, brushes for the hair, that cannot be harmed by hot water, tape lines, pen holders, pencil cases, cigar cases, government boxes for the army and navy, government buttons, and an endless variety of articles are thus

made, and the articles are of a most elegant character; syringes of a novel form and character; machines for oiling cars and engines, on a new principle, indicate that this new use of rubber is to work a complete revolution in the arts and manufactures.

But one of the greatest applications of this new rubber manufacture is the new telegraph wire that is made from it. It needs no poles, as it is laid in the ground. It needs no covering; a trench of a few inches is dug; the rubber telegraph wire is put in and covered up; the wire is enclosed with the rubber; no dampness can effect it; no storm render the wires inoperative; no insect sever; no rust corrode. It would appear fabulous if we should state the miles of this wire that have already been engaged, and the goods cannot be made to meet the demand.

The government of the United States is now the best customer of the Beacon Dam Company. The call for the Navy and Army button is immense; the article is elegant; the naval button has on it the motto, "don't give up the ship." And so tough are these rubber buttons, that if one is placed on an oak plank and pressure applied, it can be sunk clear into the plank, and will come out unharmed; and the government shaving boxes, which are about three inches in diameter, are so strong that a man weighing 200 pounds can press his whole weight on one of them, and not break them. Gun handles, sword handles, and other military implements are constructed from this material. They are cheap, elegant, enduring.—*Boston Journal.*

#### CULTIVATION OF BUCKWHEAT.

It seems unnecessary to write anything in regard to the cultivation of buckwheat.

Throughout the Eastern, Middle, and Western States and the Canadas it grows almost spontaneously, and it would seem that the only thing requisite to secure a crop is to scatter the seed. It sometimes receives injury from early frosts, but, as a general rule, no crop is better adapted to the short, hot summers of the Northern States. Botanically, it is not a cereal, but its natural character and composition closely resemble this useful order of plants. Except millet, no plant used as food for man can be sown so late in the season; and this to the farmer is one of its most valuable qualities. It is frequently sown after a



crop of rye has been taken off the ground, and thus even in the comparatively short seasons of the Northeastern States and the Canadas, two crops used as food for man can be obtained from the land the same year—a result seldom or never obtained in the long, damp seasons of the British isles.

Buckwheat is a plant known in almost every part of the world. It is supposed to have been first grown in Europe about the time of the Crusaders, and the French called it *ble Sarrazin*. In China, Japan, and Russia, it forms a large portion of the food of the inhabitants, and in Switzerland, the south of France, and Flanders, it is cultivated to a considerable extent. It has been grown in England for upwards of three hundred years, but the cool climate of England is not well adapted to its perfect elaboration, and hence it is not very extensively cultivated. In no country does it flourish better than in the United States—no where else do we find the luxury of hot buckwheat cakes so frequently upon the breakfast table.

Buckwheat will grow on the poorest of sandy soils, and it has been extensively cultivated for the purpose of plowing in manure. Nevertheless, we are inclined to consider buckwheat as an exhausting crop. EMERSON, in the *Farmer's Encyclopedia*, says: "It is generally thought to be a severe crop upon land, and for this reason it is seldom sown upon highly improved ground. Rough and hilly districts are considered peculiarly favorable to the culture of buckwheat, which is admirably adapted to subdue new or wild lands."

Mr. BALLINGAL, in the *Transactions of the Highland Society*, has given an account of his experiments with it upon a clay loam recently limed, from the results of which he warned his brother farmers that it is "useless to attempt to grow it upon damp soils, or to expect full crops upon lands exhausted by over cropping." We certainly cannot recommend the cultivation of buckwheat for plowing under as a fertilizer. Clover is by far a better crop for this purpose. If the soil is too poor to grow clover, we should expect better results, in the Middle States at least, from the white lupin, or some other leguminous plant.

"The mode of culture," says an experienced writer, "has varied considerably since my recollection. It was formerly the

custom to reserve the poorest land for buckwheat. It was considered a great reproach to land to say it would produce only buckwheat. The practice was to break up sward land early in the spring, and let it lie until about seeding time, and then cross plow and seed. The practice now among good farmers generally is, to sleep the fields intended for the crop as long as can be done before sowing, and plow but once." The time of sowing varies in this State from the 20th of June to the 4th of July. It is sometimes sown as early as the 10th of June and as late as the 15th of July. If sown too early it is liable to blast, and if too late it is frequently injured by frost.

When grown for the grain, a bushel of seed to the acre is usually sufficient, and if the ground is rich it is not safe to sow so much, or it will run too much to straw.—It flourishes best in a mellow, dry, loose sandy soil. "No crop," says GEO. W. DURANT, in the *Albany Cultivator*, "will feel manure of any kind or in any state so quick as buckwheat. Barn-yard manure, whether green or rotted, ashes, lime, plaster, all seem to produce a wonderful effect when applied to this crop. Guano, as far as my knowledge extends, has not been tried, but I have no doubt the effect would be a considerable per cent. above any other manure, barn-yard manure not excepted. We have seen Peruvian guano applied to buckwheat with the most astonishing effect one hundred bushels per acre—doubling the crop.

The flowers of buckwheat are particularly attractive to bees, and where bees are kept in considerable numbers at least a small patch of buckwheat should always be sown.

Buckwheat is an excellent food for poultry. Pigs thrive upon and are fond of it, and when bruised it is good food for horses—two bushels being equal (for this purpose, it is said) to three of oats. Cows, when fed with it, yield a large increase of milk. Sheep, when fed upon the plant when in blossom, stagger and tumble about as if drunk.

We throw out these hints with the hope of eliciting the experience of some of our practical readers.—*Genesee Farmer*.

## ROTATION OF GARDEN CROPS.

MESSRS EDITORS:—Although the generality of farmers understand the importance of a rotation of crops, this fact does not appear to be so fully appreciated by gardeners; and yet a rotation of crops in the garden is not less important than in the field. On looking over the pages of a standard agricultural work, I find this subject so concisely yet comprehensively treated, that I cannot but think you would be doing your many readers a service by publishing it.

Yours, E. T. S.

GARDEN CROPPING.—It is a general rule that every crop should be of a different kind from that which immediately preceded it on the same ground: peas, for example, should not be sown where the ground was last occupied by peas. The succeeding crop should not be one of merely a different kind, but one closely allied should be avoided: hence beans and kidney beans would also not be proper after peas, for they all belong to the same family. In the following enumeration of the principal kitchen garden plants, those belonging to the same natural family are respectively arranged under the same number:—

1. Pea, Bean, Kidney Bean, Scarlet Runner.
2. Cabbage, Borecole, Savoy, Cauliflower, Broccoli, Turnip, Radish, Mustard, Cress.
3. Carrot, Parsnip, Celery, Parsley.
4. Potato, Tomato.
5. Onion, Leek, Garlic, Shallot.
6. Beet Root, Spinach.
7. Lettuce, Endive, Chicory, Salsafy, Scorznera.
8. Sorrel, Rhubarb.
9. Artichoke, Cardoon.
10. Cucumber, Gourd.

From the above it will readily be seen what vegetables belong to the same family. None classed under the same number should follow each other. If circumstances will admit, the succession should be formed from amongst the kinds enumerated under any one of the other numbers. In small gardens, where only a few things can be grown, a change of crop may not be practicable, but in this case trenching and manuring become especially requisite.

*Farm Journal.*

## NEWSPAPER PATRONS.

This thing of *patronage* is a queer thing. It is very correctly remarked by some one, that it is composed of as many colors as the rainbow, and is as changeable as the hues of the chameleon.

One man subscribes for a paper and pays for it in advance, he goes home and reads it the year round with proud satisfaction that it is his own. He hands an advertisement; asks the price and pays for it; this is patronage.

Another man says: "Put my name on your list of subscribers;" and goes off without as much as saying "pay" once. He asks you to advertise, but says nothing about paying for it. Time passes; your paper is exhausted, and you dun him; he flies in a passion; perhaps he pays you; perhaps not.

Another man has become a subscriber sometime. He becomes tired of it, and wants a change. Thinks he wants another journal; gives it up, and you a bad name. One of his papers is returned to you marked "refused." Paying for it is among the last thoughts. After a time you look over his account and send him a bill of "balance due." But he does not pay it; treats you with silent contempt. This, too, some call patronage.

Another man lives near you; never took your paper; it is too small; don't like the paper; don't like its principles; its leaders are too strong, its tales too dry; *vice versa*, of something else—yet goes regularly to his neighbor's and reads it; finds fault with its contents, disputes its positions, and quarrels with its types, ink or paper. Occasionally sees an article he likes, buys a number per quarter. This too is patronage.

Another (and bless you it does us good to see such a man) says: "The year for which I have paid is about to expire. I want to pay for another." Another man subscribes; he gets it regularly, and reads it carefully, and will always praise it every time he sees you, as being a good paper, wishes you success, hopes others will subscribe and encourage it, is disappointed if it is not issued regularly, and is the first to complain of its non-appearance—all this he can do; yet never dreams of paying unless you dun him, and then with good promises he will put you off. This, too, is very common patronage.

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 PRODUCTION AND CONSUMPTION OF WHEAT.

One of the most important facts now to be ascertained, and one that could be ascertained with as much ease as any other item of information gathered by the census takers, is the quantity of wheat produced, and quantity consumed in this country. It is the only way that we can determine whether we have a surplus or not for export at any time, to know how much we want at home.

It would be very easy to make a calculation



how much would be eaten if all had their fill, because we know that a pound of bread a day would be a fair allowance for each individual in a family, or community, that used wheaten bread without restriction. We suppose, upon the average, wheat yields 50 pounds of flour per bushel, and that 40 pounds of flour make 60 pounds of bread; so that six bushels of wheat per year, for each member of the family, would be a fair calculation, provided the whole population used wheat flour exclusively. But they do not.

A very large portion of the population of all the Southern States live exclusively upon bread made of the meal of Indian corn, as the slaves may be said never to taste wheat bread, while many of their masters eat it but sparingly. In the Northern States, corn, rye, buckwheat, are eaten largely, and, to a limited extent, oats and barley, for breadstuff, so that we doubt whether the consumption of wheat in this country exceeds two and a half or three bushels per annum to each inhabitant. We think a calculation based upon three bushels a safe one, so that assuming that as the quantity required for home consumption, and adding the exportation of the last year, the total of the crop can be approximated, and then if the yield of any given year is equal to the previous one, the quantity it will afford for exportation can be at once determined, and the price abroad would be the regulator of the prices at home. Now it is regulated by wild and reckless speculation. To ascertain the yield, consumption, quantity to export, and price, should be the business of government, and if this country had one, such would be its business.

Now the whole of the immense wheat business, and the price and demand of different sections of the country, is based upon guess-work.

This is the cause of such terrible fluctuations in prices, bringing ruin upon scores of men every year, who engage in such guess-work business.

It certainly would be one of the easiest things in the world to ascertain, in a farmer's family that do their own milling, how much wheat is used in a year, and yet we do not believe one in a thousand can answer the question, and we doubt whether those who buy their flour could give any accurate account of how many pounds per head is sufficient for their yearly supply.

It is an important question—who can answer it:—What is the average crop, how much is exported, and what is the annual consumption of wheat in the United States? At our rate of calculation it is something over sixty millions of bushels a year. The census calculation of the product of 1849, was one hundred millions of bushels. As the product has gained as fast as the population, that would give forty millions of bushels per annum, for exportation—sufficient we should say, always to keep the price of wheat and flour far below the speculative

price of last winter, which was based, as it has proved, upon guess-work, and not on the demand for export or consumption.

D. J. Browne, Superintendent of the Agricultural Bureau of the Patent Office, makes the following calculation of the grain products of the United States for the year 1855, to which he had added an estimate of values as follows:

	Bushels.	Value.	Total Value.
Indian Corn.....	600,000,000	\$0 60	\$360,300,000
Wheat,.....	185,000,000	1 50	217,500,000
Rye,.....	14,000,000	1 00	14,000,000
Barley,.....	6,000,000	90	5,940,000
Oats,.....	170,000,000	40	68,000,000
Buckwheat,.....	10,000,000	50	5,000,000

Upon what data this estimate is based we are not aware, or at what point between the producer and consumer the calculation of price is made we are not informed. Certainly, the farmers of this country, as a whole, never realize anything like the prices affixed to the different products named. The price of Indian corn in all the great corn growing States of Kentucky, Ohio, Indiana, Illinois and Missouri, will not average one-third of the sum stated per bushel; and we doubt whether in all the United States it will average one-half. If the error in quantity is equally erroneous, the table is not of much value in calculating the surplus for export, or the number of bushels used for home consumption.

The above table gives the grain products of 1855 at 965,000,000 of bushels, to which add, as estimated in the same calculation, 110,000,000 bushels of potatoes, and 9,500,000 bushels of peas and beans, 250,000,000 pounds of rice, and it does appear to us like a pretty liberal allowance of breadstuff. With anything like the quantity of the coarser portion of the products which we do not export, and a considerable portion of which goes to swell the amount of bread consumed by the people of the country, we are satisfied that our calculation of three bushels per head as an average consumption of wheat each year, is fully up to the mark, and all the excess over that quantity of any crop, may be set down as so much surplus to feed some other country, less the small quantity used in starch and cloth manufactories.

Now, if we could have an accurate census of the production of the country taken every five years, and then some careful estimates of the actual consumption, it would be very easy to determine every year what was the actual surplus on hand, and so regulate the price upon the only true basis—demand and supply.

The price of wheat in Chicago and other great wheat marts of the West, has quadrupled in ten years. Such fluctuations are not advantageous to producer or consumer, and only occasionally to the grain merchant. They can only be obviated by a careful ascertainment of the annual production of the country, and the average annual consumption *per capita* of the whole people, and how much consumption is affected by high or low prices. Not that the people can

do with less food, but that the natural tendency is to seek substitutes for dear flour. We are free to say, that in our opinion, the true amount of the annual production and consumption of wheat, is of vastly more importance to be correctly known, than the production and consumption of cotton.—*New York Daily Tribune.*

#### THE REAPING MACHINE AS AN IMPLEMENT OF PRACTICAL UTILITY.

The judges' award over the adjourned trial of the reapers is of rather a Delphic character.—The Romans may conquer you, or you may conquer the Romans. Crosskill may at first sound better than Dray, though for its especial object Dray may yet be "the best machine." For years now have we thus been ringing the changes. At first Crosskill's Bell is indisputably to be preferred; then Mr. Dray has his turn with his improvement on Hussey; and for a third season, after all the deliberate consideration of an adjourned trial, Burgess and Key's McCormick is unhesitatingly declared to be superior to all others. This is certainly rather perplexing, though at the same time the deduction to be made is sufficiently encouraging. If Bell's machine was good enough to take a prize on the first trial, of course Dray's must be an improvement to supersede it. McCormick by the same reasonable showing is still further in advance; and now Mr. Crosskill, after lying off for a time comes out again and wins the fourth heat with an implement—excellent in its original design, at length perfected to something more excellent still.

Curiously enough, however, any such conclusion is but a false one, after all. Either the exhibitors or the public would not appear to be in the way of profiting much by this adjourned trial at Bosted. The judges divide fifty pounds as near as they well can amongst three entries, toning down any effect that may follow placing a first, by adding that the one they mention only in a third degree is yet for reaping, the best of all. The would-be customer scratches his head in no little doubt and perplexity—What is best, or which ought he to have? The answer again is but an echo of the oracle, "I say that Crosskill and Burgess and Key are to be preferred, but that Dray is the best reaping machine." But this is not all. Clever men like these makers have no doubt been continually watching each other; and thus, gaining a wrinkle here and smoothing an objection there, have all gradually crept on to something like equal ability and perfection. Curiously enough, again, this is but another as erroneous a supposition: "The judges regret to observe that very little improvement has been made in this class of machines since last year."

What is the farmer to do? His crops want harvesting, labour is scarce, and indirectly—for it comes very much to this—there is no machinery that he can trust to. Get over as he may this present time, for these adjourned trials come

far too late to be of any immediate service, what is he to look forward to or order for another occasion? We really hardly know how to advise him. The Bosted Commission report with very faint praise; although, according to all reports, the implements would seem to have worked very well indeed. Let us grant, still, that the reaping machine is not as yet perfection; but a more pressing point by far for our consideration is—*is it fit for use?* Could the farmer with any confidence call in its aid in his present difficulty? Under ordinary circumstances and fair play, not exactly always opposed to wet weather and laid crops, would the experiment promise to answer?

Fortunately the Royal Agricultural Society itself can answer for us. Almost simultaneously with the appearance of this official award of the judges, comes the new number of the *Journal*. We have had little opportunity as yet to study its more elaborate essays. There is, however, one short paper that speaks so well and so directly to this matter, that he would at once call attention to it. Mr. Anthony Hamond with some very valuable and recent experience during his three years' service as a steward of implements, is requested by the Chairman of the Journal Committee to give, more especially, his experience of the reaping machine. Mr. Hamond replies in this wise—"I have great pleasure in doing so. I think I may fairly say *it has now attained that degree of perfection which entitles it to be classed amongst implements of practical utility.*"

The growers of grain will join in with a very energetic "*Hear, hear,*" over this. But this is not all. Mr. Hamond's is something more than an opinion. It is thus he proceeds to his practice: "At the Lincoln meeting I purchased an improved Hussey, by Dray, with tipping board. This I have used for *two harvests*, entirely to my satisfaction. It has not required twenty shillings in repairs, and is now ready to go to work at half an hour's notice. The first year I cut about a hundred and fifty acres of wheat, oats, and rye; the second, a hundred and fifty acres of wheat, besides oats and rye."

Mr. Hamond next explains how he works the machine, and at what cost: interesting particulars, to which our readers can easily refer, but for which we have not space. He concludes his letter, dated from Westacre, in May last, by saying that he "hopes to go to work next harvest with two Hussey's stern-deliveries, and one Burgess and Key's side-delivery. The mowing of barley by the latter at Mr. Miles' last year was very near perfection."

Another correspondent of the *Journal* introduces Mr. Parrington, of Lazenby, who expresses his "entire satisfaction" with the performance of Burgess and Key's McCormick:—"I have cut with it autumn and spring-sown wheat, varying in yield from thirty-two to forty bushels per acre, some of it much lodged; also a very heavy crop of oats, so much laid and twisted in



parts, that I thought it impossible for any machine to cut them at all. One pair of horses worked the machine easily day after day; they have to travel no faster than the ordinary ploughing pace; and a boy of fifteen managed them without any difficulty."

It will be observed that while Mr. Hamond speaks up for Dray, Mr. Parrington is equally strong for Burgess and Key. The correspondence does not extend beyond the remarks of these two gentlemen; although, if necessary, many as warm an advocate might be found for Mr. Crosskill's persevering improvements on the Scotch invention. In the position he now occupies he can well afford to hear this testimony to his contemporaries—in its effect as grateful to him as to them. "The reaping machine has now attained that degree of perfection which entitles it to be classed amongst implements of real practical utility."

The award of the judges at Boxted would scarcely lead us to believe as much. For our own part we cannot help fancying that this decree is altogether a little too hard in its tone.—Its tendency, too, is impolitic. If there is any implement just now which should be encouraged into general use, it is the reaper. We think, moreover, the merits of these several inventions are sufficient to warrant a recommendation. It is with this view that we compare the award in Essex with the paper in the *Journal*. Even if there be no great improvement since last year, the reaper is proved to have advanced so far as to rank amongst the agricultural implements "of real and practical utility."

A word even now may perhaps be not everywhere too late.—*Farmer's Magazine*.

#### THE LIFE OF SEEDS.

We suppose that almost every person has heard or read the story of some grains of wheat having been found in an Egyptian mummy, which were sown, vegetated and yielded grain after its kind. This case and some others of a rather dubious character have been adduced in evidence of the great vitality and longevity of seeds; but we have now very reliable and practical evidence throwing some discredit on such stories.

The British Scientific Association have, for the past fifteen years, been instituting inquiries and making experiments, through a committee of its members—with various kinds of seeds, of various ages. Their labors tend to show that none of the seeds which were tested, although placed in the most favorable circumstances that could be devised, vegetated after the age of 49 years; and only 20 out of 288 species did so after 20 years, while by far the largest number lost their germinating power in ten years.

It has long been known to agriculturists and florists, that fresh seeds—those of the preceding season—possess the greatest amount of vitality; and very many seeds lose their germinating power altogether, even when kept in dry situa-

tions—in the course of two years. In the selection of any kind of seed, care should be exercised, in selecting it according to its age, as well as its appearance; the plumpness of a seed, is not always the best sign of its quality for seeding purposes.—*Scientific American*.

#### AUGUST STORMS.

It is a remarkable fact that between the 1st and 24th of August a severe storm of wind and rain visits our country every year. It generally commences in the Gulf of Mexico, and proceeds in a curve round the Atlantic coast, and penetrates hundreds of miles into the interior. The storm this year was the most severe that has taken place in a great number of years, and committed great ravages. It is also somewhat remarkable that severe storms visit England in the same month. Great freshets take place, the same as have been experienced this year in so many districts of our country. Of old they have been designated "Lammas floods"—Lammas being the name for the 1st of August.—*Id.*

#### RULE FOR MEASURING CORN IN THE EAR.

Arrange the corn in the pen or crib, so that it will be of equal depth throughout; then ascertain the length, breadth, and depth of the pile; multiply these dimensions together, and their product by 43. Then cut off one figure from the right of the last product, and the remainder will be so many bushels of shelled corn; and the figure cut off will show so many tenths of a bushel more.

EXAMPLE.—In a crib or pen of corn in the ear, measuring ten feet long, eight feet high, and seven feet wide, there will be 252 bushels of shelled corn.

Thus— $10 \times 8 \times 7 \times 4\frac{1}{2} = 252.0$ .—*Valley Farmer*.

From the American Agriculturist.

#### GARDENING IN VIRGINIA.

The climate of this State differing materially from that of New York, the routine of gardening is necessarily different in the culinary department. Here we can safely put out cabbage, lettuce, onions, and many other vegetables, to stand the winter. Cabbages planted in November produce first-rate heads in the following May, and if attention be paid to securing the proper kinds, a supply may be had in July of those planted in November. For example, the Enfield, Large York, and Flat Dutch, sown and planted out at the same time, make a fine succession—the Enfield coming first, followed by the Large York. All these kinds stand the winter well, and make finer cabbages than those sown on hot-beds in early spring. Cauliflowers having the protection of a south fence, stand the winter very well, and most kinds of lettuce, if properly planted, are unharmed through the winter. We are thus enabled to produce a fine supply of early vegetables. Peas and other spring growing vegetables will allow of being sown much earlier than can be done in the northern States.

## CONTENTS OF No. XI.

Improvement of Land from its own Resources, . . . . .	325	Editorial—To our Subscribers.—General Notice, . . . . .	342
Feeding Horses, . . . . .	326	Fall Ploughing, . . . . .	343
Slaughter-house of Montmartre, . . . . .	327	The American Farmer, . . . . .	345
Morrison's Reaper.—Thrashing by Steam Power.—Trial of Reaping Machines in England, . . . . .	329	Abandonment of Farms in New England To Destroy Fly in Wheat, . . . . .	346
Comparative Produce of different kinds of Wheat, . . . . .	330	Keeping Sweet Potatoes.—Gravel Walks. Breadstuffs.—The Cultivation of Asparagus, . . . . .	348
Mr. Barry's Address, . . . . .	332	Thick and Thin Sowing of Wheat, . . . . .	349
Portraits from the Field and Farm-Yard, Trees, . . . . .	334	The Wonders of India Rubber.—Cultivation of Buckwheat, . . . . .	350
Financial and Commercial.—Wagon Covers—Every Farmer his own Manufacturer, . . . . .	338	Rotation of Garden Crops.—Newspaper Patrons.—Production and Consumption of Wheat, . . . . .	352
Khaisi Cattle and their Crosses.—Important to Wheat Growers in North Carolina.—Blankets for Negroes.—The Growth of the Wheat Plant, . . . . .	339	The Reaping Machine as an Implement of Practical Utility, . . . . .	354
		The Life of Seeds.—August Storms.—Rule for Measuring Corn in the Ear.—Gardening in Virginia, . . . . .	355
		ERRATUM.—Khain Cattle, read Khaisi.	

## LIST OF PAYMENTS,

From 4th September to 15th October, inclusive.

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

Jas E Woltze, Oct 1857	\$1 00	W Long, Jan 1857	3 75	John Burr, Sept 1857	1 00
T J Taylor, Jan 1857	4 00	Col J Grige, Jan 1858	3 00	E W Burruss, July 1857	3 50
F B Whiting, Oct 1857	1 00	J B Chandler, Jan 1857	1 00	J H Etheridge, Jan 1857	1 00
J H Heath, June 1859	5 00	Dr John Duval, Jan 1860	5 00	W P Peyton, do	1 00
Jno Edmunds, Jr. Nov 1856	1 25	Wm S Hinton, July 1857	1 00	A M Sholtz, Jan 1859	5 00
Ro P Taylor, Jan 1857	3 00	W Boylan, Jan 1859	5 00	Wm Major, June 1857	2 00
Thos W Sydnor, Jan 1857	1 00	Dr H W Tabb, Jan 1859	5 00	E L Travis, Jan 1858	1 00
Ro M Childress, do	3 25	R Hickman, July 1856	4 25	Col R R Brown, Jan 1858	1 00
N K Foster, April 1857	1 00	W T Parrott, Jan 1857	1 00	Col Birdsong, do	1 00
A Wade, Jan 1857	5 00	Thos H Brown, April 1857	1 00	Jas E G Hanes, Jan 1857	2 50
D D Ferebee, Jan 1857	5 00	D W Barton Jan 1859	5 00	John Wharton, June 1856	2 00
Ro C McClure, June 1856	3 00	P Thomas, Sept 1857	1 00	W B Yancey, July 1859	5 00
Jos A S Acklin, July 1857	1 00	Geo W Turner, Jan 1858	1 00	Dr D S Green, Jan 1858	1 33
J Hightower, Jan 1857	1 00	N Womack, Dec 1858	5 00	W B Gates, Oct 1857	1 00
Ro Maiben, July 1857	1 00	John Washington, July 1859	5 00	Dr D S Morgan, Oct 1856	2 83
D G Smith, June 1857	1 00	Jas Barbour, do 1857	1 00	Wm M Tait, April 1858	2 00
A A Hancock, August 1857	3 00	E Y Hamlin, Jan 1860	5 00	W Gordon, Oct 1857	1 00
W H Dennis, Jan do	9 00	H E Coleman, Jr. July 1858	2 50	B H Dawson, Jan 1859	5 00
Wm Worsham do do	1 00	Wm H Watts, Oct 1856	94	Jas J Brown, Oct 1857	1 00
Gen E P Scott Jan 1859	5 00	W A Wilkins, do	94	Jas Miller, Jan 1857	1 00
Geo Simpson, July 1857	1 00	Geo Blane do	94	W S Wright, July 1856	5 00
John H Tabb, Jan 1857	2 00	C J Cabaniss, Sept 1857	1 00	J H Earnest, Nov 1857	2 00
Mrs S J Jones, April 1857	1 00	W Menefee, July 1856	10 00	W Harper, July 1859	5 00
Chas T Graves, Sept 1857	1 00	A B Anderson, Sept 1857	1 00	Wm Leitch, do 1857	1 00
Jno F Whitfield, Jan 1858	2 00	J J Crews, Jan 1857	2 50	Dr P H Anderson, Jan 1858	1 00
Geo H Crishman,	3 00	J B Crews, do	2 50	A G Gooch, Oct 1857	1 00
Wm H Fry, July 1857	3 00	S A Norfleet, Jan 1860	5 00	Jas Sims, July 1856	4 37
N W Crisler, Jan 1859	5 00	Jas G White, Jan 1857	1 00	W G Overton, Jan 1858	2 00
J H Batte, May 1858	4 00	W S Warwick, Sept 1857	1 00	Jos Tisdale, Sept 1856	2 50
R M Williams, Sept 1859	5 00	J D Walthall, Jan 1857	1 00	C L Dicken, Jan 1859	5 00
Thos A Downes, Jan 1857	5 00	Jno A Burwell, Sept 1856	2 50	Col R Earley, Oct 1857	1 00
Jas H Lewis, Jan 1859	5 00	J A Fisher, July 1859	5 00	A W Hanserd, Sept 1857	1 00
A Rives, September 1858	5 00	H A Richards, Sept 1858	5 00	P M Tabb, Jr, Jan 1857	2 00
Rev Ge. Adie, Sept 1856	1 45	E C Robinson, Jan 1858	2 00	Chas Massie, Oct 1857	2 00
Wm S Graves, Jan 1858	2 00	G T Thomas, Sept 1857	2 00	Jno C Green, June 1859	5 00
John Arrington, Sept 1858	5 00	Ro Grattan, July 1859	5 00	Dr W J Michie, Jan 1858	2 00
F L Olmstead, Feb 1859	5 00	R C Miller, Jan 1860	6 00	Fras Staples, Jan 1857	2 00
B C Watkins, Sept 1856	1 00	T J Blake, Jan 1858	1 00	R A Gray, do	2 50
Jno W Scott, July 1857	1 00	Jas Collins, June 1857	1 00	Jas F Jones, Sept 1859	5 00
H Massie, Nov 1855	3 54	Wm E Randolph, Oct 1857	1 00	J C P Edwards, July 1856	11 25
L G Edwards, Jan 1859	5 00	N Q Lipscomb, Jan 1858	2 00	Jno Morton, Jan 1858	1 00
Jas M. Thomas, Nov 1857	2 00	Jas L Mays, Oct 1856	1 00	R B Washington, July 1859	5 00
Geo Stillman, Sept do	1 00	Jas R Pulliam, April 1857	1 00	J R Motley, July 1857	2 25
C W Friend, Jan 1858	2 00	Sam'l Tunstall, Jan 1857	1 25	L D Edmunds, do 1856	13 12
B J Barbour, Jan 1860	5 00	R Blackwell, April 1859	5 00	P D Barbour, Sept 1857	5 75
Wm C Graves, July 1857	1 00	W H C Reynold, July 1857	1 09	J P Taliaferro, Jan 1858	1 00
R C Davis, July 1856	4 37	S B Hunton, Jan 1858	5 00	R Galloway, June 1857	2 50
E Valentine, Jan 1859	5 00	Dr C Bowers, Jan 1859	5 00	H Carpenter, do	1 00