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FRANK: G. RUFFIN, EDITOR.

# THE SOUTHERN PLANTER.



DEVOTED TO

AGRICULTURE, HORTICULTURE,

AND THE

HOUSEHOLD ARTS.

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# THE SOUTHERN PLANTER



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

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

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

FRANK. G. RUFFIN, EDITOR.

F. G. RUFFIN & N. AUGUST, PROP'RS.

VOL. XVIII.

RICHMOND, VA., FEBRUARY, 1858.

NO. 2.

*For the Southern Planter.*

## ORNITHOLOGY.

In your last letter, Mr. Editor, you ask—"What has become of those ornithological articles, promised for the Planter?" I fear the promise was a rash one, but shall make the attempt to redeem it, and I now begin with the House Wren,—*Sylvia Domestica*, of Wilson, Troglodytes *Ædon*, of Audubon, and other systematic ornithologists. This little bird, which is 4½ inches long and 5½ inches in extent of wings, was a rare one, in this portion of the State 20 years ago. The first I ever saw, was at Airfield, the residence of the late Col. Claiborne W. Gooch, in the year 1839. The Colonel informed me that a pair arrived there about the 1st of June the year before, and that, then, there were as many as three pairs building about his premises. The bird was a stranger to him. He thought it was a creeper. I at once recognised it as belonging to the wren family, though previous to that time, I was familiar with but two of its species—the Winter Wren and the Great Carolina Wren. The latter had monopolised the barns and stables, and out-houses, when unmolested, and was the only representative of its family, who raised its young with us, except the Marsh Wren.

In the year 1840, a pair of House Wrens reached Dunluce, the residence of my friend, the late Thos. Roane. They built in a large tin cup which had been left on the top of one of the plates of his front porch, where they have continued to build as late as the year 1855, since

that, I do not recollect to have observed them. On a bright morning, towards the end of May, 1841, what was my delight to hear one of these sweet little songsters, chattering away in an apple tree, near my own dwelling. In a day or two afterwards he met with a female, whom he had persuaded to unite her destinies with his. He looked as if he would split his little throat with his loud and continued trills. He commenced examining every crack and *cranny* about the premises. I mustered up several tin cups, a gourd, and a horse's head, in which the Great Carolina Wren often shows a predilection for building, and finally made a neat little box for the enamored pair. All these habitations were examined by them with curious eye. Jenny was much taken with the gourd, into which she would often enter. But none of these things pleased the fancy of his wrenship, who seemed determined not to surrender his prerogative as head, even during the honey-moon, in deciding this important question, so he arbitrarily settled upon a pudlock hole, in the west gable of my dwelling-house. Here he began to build by carrying up with the greatest activity, sticks of quite a large size for him.—Every now and then he would perch on the horizontal limb of a locust tree, that was nigh, and pour forth his lively song, with down-spread tail and drooping wings, and feathers ruffled up, so as to make himself appear nearly as large again, as he really was. He would then make a sortie against a pair of Cat birds, whose nest was in a mulberry tree, about 15 feet from his own. They had been by no means indifferent specta-

tors to the works the new-comers had been carrying on with so much industry. With many wags of the tail, with various clucks and *quaes*, and knowing twists of the head, they had debated the matter between themselves; and had come to the sage conclusion, that this thing foreboded no quiet to them. But what to do, seemed a difficult matter to determine on. At last, they came apparently to this decision, that it was best to keep a sharp lookout upon their neighbour's proceedings, without making any actual demonstration of hostility. From this time one of the Cat birds always remained in the mulberry tree; and not a solitary stick could the industrious wrens carry up but it was closely scanned with head turned awry and tail drawn forward over the back, exhibiting plainly the whole of the bright chestnut beneath; at the same time a torrent of harsh, grating, and to me, unintelligible gutturals, were poured forth. But the wrens seemed to understand it well enough, and became highly indignant at such insulting deportment. It was on this account that the male wren would pour forth his song of defiance, and swell himself up to such formidable dimensions. This did not produce the desired effect. For the absent Cat bird would join the one on the watch and both would puff and swell to an extent greatly beyond what the wren was capable of; whilst their gibes and jeers expressed in harsher gutturals still. He would lose all control over his, at best irascible temper, and would rush to the attack. The Cat birds thinking "discretion the better part of valor," would retreat from limb to limb, running over the gamut of ear grating sounds, with the most astonishing variety; at the same time redoubling their insulting and offensive motions, with the head, wing and tail. This would provoke the wren to follow up the attack with renewed vivacity, and the Cat birds to get out of the reach of his formidable little bill, would retire to an adjoining mulberry, but not abating a whit in their antics and gibes. The wren, however, would justly claim this as a victory, and would retire to his favorite locust limb and pour forth his song of triumph, in the hearing of his admiring and tender spouse. In 10 or 15 minutes they would repair to a cedar hedge near by, and solace themselves with love.

Thus did our little hero build, and fight, and sing, and love, for a fortnight; when the great business of incubation was entered upon by his beloved Jenny. Their provoking neighbours were engaged in the same business. Now more friendly feelings seemed to have arisen between them. The greater part of the day would the two males, the one seated on his locust, the other on the top of his mulberry, pour forth their melodious warblings, unrivalled on the part of the Cat bird, unless perhaps by the Mocking bird.

These songs would be interrupted at intervals, to procure an insect for themselves or ten-

der mates, or to lave, and prune and adjust their plumage. When his young were hatched our little hero had his hands full. He had to bear his due share in supplying their craving appetites with food—to watch Grimalkin, whom he took especial delight in scolding, and to fight off all other birds who might chance to alight near his nest. The relations between himself and his ancient enemy, the Cat bird, however, remained quite cordial; frequently they would be seen sitting on the same limb, in three or four feet of each other, in perfect harmony. As his young ones grew, the little wren had less and less time to sing, so incessantly was he occupied in bringing them insects. But now and then he would steal a few minutes to pour out his little soul in song, to which his young would listen with attentive ear, ceasing the while their own eternal twit.

In about fifteen days they led forth six young ones, seemingly larger than themselves, though their tails were not quite so long. They fed them assiduously ten or twelve days. The young would follow them like little mice on the ground in the hedges, and orchard, and along the fences. They gradually receded from the house till they were lost to me. I never saw the young ones again, unless in the following spring, when they were grown up wrens. But in less than a fortnight after their hegira from the nest, I heard the song of the old male from his accustomed limb. I went forth with a heart right glad, to see if it was, indeed, my little friend. Sure enough there was he, and his faithful Jenny. They furnished up their nest a little, and in due time led forth a second brood consisting of four. These were watched over with the same assiduous care as the first. They lingered about the premises for a week or so, then disappeared, and all was silent and desolate, at the house of the little wren. They had commenced their long and perilous journey away beyond the borders of the United States, to spend their winter in the climes of the sunny South, perhaps as far as 30° the other side of the Equator.

But in May 1842, my little friend returned, and sung still more sweetly from his locust limb. In a few days there were as many as three other males in the yard. The females soon arrived. And then commenced a series of the fiercest battles between the males. Peace was at length restored, all the males had found suitable mates, but still only two pair remained. They built in the pudlock holes, of which there were four in the gable. Each of these pair raised two broods, and left about the last of August. Year after year, till 1854, they continued to build in these same pudlock holes. Whether they were the same birds I cannot tell; but I could not help thinking that such was the fact. In the mean time my little colony had increased till a dozen or more pair built near my premises. They are so pugnacious, however, that except in the case of the two,

who built in the pudlock holes, about twelve feet apart, and which I took for father and son, I have never known them to permit another to build at a less distance than one hundred feet. And even then their battles are very frequent.

To give you an idea of the courage and pertinacity of these little creatures in asserting and maintaining their rights, I will relate an incident which occurred in 1856. The year before I had set up a good many little boxes for the wrens, a pair had built in one of them. But previous to their return in the Spring, a pair of Blue birds had taken possession, and the female had laid two eggs. When the wrens arrived, you may well conceive their indignation, by imagining what would be your own, if on a return from a trip to the springs, you should find that some ambitious couple had appropriated your mansion to themselves, and refused to give it up.—In an ecstasy of rage, the male rushed into his box and began to demolish the nest of the Blue bird. Presently the female Blue bird lit on the box, and seeing what was going on, flew to an upper branch, uttering a low plaintive note, peculiar to expressing the emotions which must then have filled her breast. In an instant the gallant male was by her side. He was a fine and beautiful bird, in full plumage, and must have been at least three years old, in the very prime and vigor of his life. The female repeated her wail, and in a little while the male was clinging to the side of the box, cautiously peeping in, as if he expected to see a snake. So soon as he discovered the wren, as quick as thought, he was in upon him. I ran up to the back of the box, which was fastened to a Mimosa tree, about five feet from the ground. The noise and thwacks within, were worthy of these two redoubted champions. At last they emerged from the box, and fastening with beak and claw, fell upon the ground at my feet. I was partially concealed by the intervening body of the small tree, but so intent were they upon the fight that they either did not see or regard me. They worked away with might and main to effect each other's destruction. At last the Blue bird seized his diminutive antagonist by the gasping throat, and pummelled him with his wings.—The wren was on his back, and I thought fast expiring. I reached down to pull the Blue bird off, he discovered me and flew away. The wren hopped to the cedar hedge, I have mentioned, and having arranged his feathers, and blown for a minute or so, began to sing as if he had achieved a signal victory. His gentle partner came, and after some little chattering between them, the male flew to the box again, though I was standing not more than a dozen feet from it. I retired a little farther, and the impatient Blue bird rushed to the conflict. But the wren had changed his tactics. I had purposely made the hole in the box very small, to exclude other birds than the wren, though I had miscalculated the size, yet it was a pretty tight squeeze for the blue bird to get in. The

wren, as if aware of this, prevented the ingress of the blue bird by protruding his long needle-like bill through the hole. After various ineffectual efforts to enter, the blue bird seemed to give it up, and seated himself on the top of the box, in an upright manner, with a disconsolate air. Every now and then both he and the female would make efforts to enter, but they were baffled by the wren. I became fatigued watching them so long, and did not observe them any more till the next morning, when I saw both of the little wrens carrying in comparatively huge sticks in a prodigious hurry. When the blue birds made their appearance, they would suspend operations, and the male would rest himself on the sticks and protrude the point of his bill just beyond the hole. So soon as they disappeared, the wrens would resume their work: and twice whilst the blue birds were present the female carried a stick in her mouth and handed it to the male. But the rough handling she met with from the blue birds caused her to stop this ingenious device, and to keep herself under cover whilst they were in sight. Thus things proceeded, and by the third day the box was so barricaded that the wrens could hardly squeeze in, and there was no chance for the blue birds to enter. The latter evidently despaired, but still kept up a harassing and vexatious warfare, soundly thrashing the poor little wrens whenever they would pass to or from their box, and before they could shelter under the hedge. I felt sorry for the blue birds, so I put a box for them in an ash tree not far off. To this they soon repaired and built. But the poor little wrens had a sad time of it during the whole brooding season. The blue birds never ceased to attack them whenever they saw them. And to add to their troubles, a pair of Baltimore Orioles built on a limb of a locust tree which projected nearly over their little box. The male oriole treated the wren worse than did the blue birds. One day whilst he was sitting on his box singing merrily, the oriole fell upon him, made him fast with beak and wing claw, brought him to the ground, plucked every feather from his tail but one, and so many from one wing, that he could scarcely fly; and unless I had run to the rescue I verily believe he would have been killed. But he was game to the last, and after I had driven off the oriole, he hopped off to the hedge and began to sing as glorious a song of victory as ever he had done in his life. He became disheartened, however, and seldom ventured to the box, for fear of the blue birds and orioles. The female had now hatched, but she was so harrassed by her potent enemies that she could only feed her young by stealth. This she managed to do very adroitly. She never flew directly to the box, but would watch her opportunity, and fly quickly from the hedge to a flowering pomegranate, under the Mimosa, this gave her excellent protection by its thick set growth. Here she would pause, and when the

way was open she would mount up to the box, and enter it quickly. But deprived of the assistance of her husband, who would not dare such a feat in his disabled condition, her young ones suffered, and they all died but two. These she raised and carried off without attempting a second brood. In the spring of 1857, I had a box, with a very small hole made for them and put in a porch near the Mimosa, they, or another pair, raised two broods in it, with great comfort and satisfaction.

They were avenged upon the blue birds too this season. I removed the identical box that was the bone of contention the previous year, and appropriated it to the use of the blue birds. They raised their first brood very early. But when they returned to raise the second, a pair of wrens had possession. After several days of contention they went off and the wrens raised their young in peace.

The house wren is very prolific, and if none are destroyed, in three years there will spring from a single pair, nearly four hundred wrens. They likewise lay a great many eggs, many more than they hatch. In my friend, Mr. Roane's tin cup, for instance, I once saw him count twenty-two eggs—all laid, I believe, by one wren. What they do with these eggs I cannot say, though I suppose they are for some useful purpose.

The number of insects, more or less hurtful to the agriculturalist, destroyed in a season by a pair of wrens and their young, is truly astonishing. I once made a calculation of the number, by holding my watch in my hand for thirty minutes, and carefully noting the times they fed their young. I have forgotten the exact number, but I think it was something like 20 times in the half hour. When we consider too, that all these insects are more prolific by a thousand fold than the wrens, and it is in their breeding season that they are cut off, we may then begin duly to estimate the services of this little creature to man. We have the means of multiplying the wrens to an indefinite extent by making boxes for them, and protecting them. They even become very gentle and fearless.—The boxes should be made four inches square, and of the same height, the hole may be bored in the gable-end with an inch and a quarter auger. If the box be too large they will frequently spoil their eggs, in spending all their time in filling it up with sticks.

I trust that every reader of the *Planter* will have a half dozen of these little boxes put up next spring for this little friend and benefactor of man. F.

*King William County, January.*

MULCHING AND STIRRING THE SOIL.—The more experience we have in horticultural pursuit, the more we are convinced that we should protect our plants by mulching; and that the drier the season the more frequently should the soil be stirred.

### Use of Gas Lime.

We have several times lately had queries in regard to gas lime put to us. The following answer, which we copy from the *American Agriculturist*, is from good authority.

[ED. SO. PLANTER.]

In all our larger towns where gas is used for lights, there is a considerable quantity of waste lime thrown out from the gas houses, lime being used for passing the gas through to purify it. We have various reports from farmers who have tried this, some in favor, some that it has no effect, while others have condemned it as rank poison to crops. Several inquiries have recently been addressed to us, one of which from F. S. Hawley, of Binghamton, N. Y., we forwarded to Prof. S. W. Johnson, of the Yale Analytical and Agricultural School requesting an opinion. His reply will throw some light upon the subject.

*To the Editor of the American Agriculturist:*

The various contradictory opinions held among practical farmers, with reference to the value of gas lime as a manure, are justified by the extreme variableness of its composition. When perfectly fresh from the gas purifiers, it is in general a rather dangerous application to any growing crops, or in contact with seed. Mr. Solomon Mead, of New Haven, Ct., informs me that he once applied it in the hill to potatoes, and they never came up. A gentleman in Wallingford, Ct., applied it to grass land and to the roots of peach trees. The trees were destroyed and the grass severely scorched, so that it did not fairly recover until the ensuing year.

It may be used in the fresh state upon naked fallows, especially when it is desirable to free the soil from slugs, injurious worms, or couch grass. What its action upon vermin may be inferred from the fact, that when fresh, it contains a substance (sulphid of calcium) which is the actual ingredient in the depilators and cosmetics, which articles are employed for removing hair. There is an account of its being thrown into a hog-pen with the intent that the swine should incorporate it with the compost heap. This was effectually accomplished, but at the expense of the bristles and hair of the hogs, which were, in a great measure, removed by the operation.

It is thought, too, that the odor of the coal-tar which is mixed with the gas lime in greater or less quantity, serves to dislodge insects and vermin, and it is sometimes sowed in small quantity over young turnip-plants to prevent the attacks of the turnip-fly. In Scotland it is largely applied to moss-land which it is intended to reclaim.

The quantity of easily soluble matters, (sulphid of calcium, sulphite and hyposulphite of lime,) is so variable, ranging according to analytical data, from 2½ to 15 parts in 100, that we

may readily comprehend how some gas limes may be quite harmless if applied in moderate doses even to growing crops, while others, rich in these soluble and deleterious matters destroy all vegetation.

It has been supposed that fresh gas lime is valuable on account of the ammonia it contains. When the gas lime is emptied from the purifiers in which it has been exposed to the gas, it has quite a pungent odor of ammonia, but the quantity, though enough to affect the nostrils, is in reality quite too small to have any great manuring value, and quite disappears after a few days exposure to the air. Mr. Twining of this Laboratory, found in a specimen of perfectly fresh gas lime from the New Haven gas works, but 8-10ths of one per cent. of ammonia. In a gas lime from the gas works at Waterbury, Ct., which had been exposed to the air for one week, he found but about 4-100th of one per cent.

Fresh gas lime may be advantageously used in composing swamp muck, &c.

By full exposure to the atmosphere, as when scattered over fallow-ground, after a time it becomes innocuous. The soluble caustic ingredients are converted into no less valuable a substance than gypsum (plaster), and then, after its odor and bitter burning taste have disappeared, it acts precisely like a mixture of lime and gypsum. How rapidly these changes take place, I have no means of knowing without making actual trial, but should presume that if a dressing of gas lime be incorporated thoroughly and uniformly with the soil *one week* before sowing or planting, no harm could result to the crop.

In conclusion, your correspondent is recommended to use it, if he can get it *more cheaply than other lime*, at the rate of 50 bushels per acre on heavy soils—or 10 to 20 bushels on light soils—making one application in three or four years. If fresh it should be put on the bare soil and not on a crop. In case of corn or potatoes, it may be scattered between the rows and worked in at hoeing time. If the gas lime is white and tasteless after exposure to air for a time, it may be sown like gypsum.

It should be remembered that a wet soil will not be much benefitted by lime, nor by any manure, unless in a dry season; and that a light dry soil is soon spoiled by lime unless a good supply of organic matter be maintained in it, by means of stable manure, muck composts, or green-manuring. Lime and plaster, too, are at the best, even when they exhibit their most extraordinary effects, but partial fertilizing agents.

S. W. JOHNSON.

**Produce on Hand.**

We submit to our readers the following calculations from a N. Y. paper of Saturday morning last:—"If we assume, which no one doubts, that the crops of all kinds have been greater this year than they were in 1856, and consider the falling off in receipts at tidewater, or in

the seaports this year, compared with last, up to this period, an estimate of the amount of the deficiency can be formed, and its value ascertained by current average prices. Thus, by comparing the deficiency of receipts of produce at Albany this year with those of last year, and fixing the average prices current for each, we shall find, from a careful examination of the official tables, that the total value of the deficiency or of the produce retained in the country, below the receipts of last year, amounts to about \$17,729,986. The cotton crop of 1857 no one imagines to be below that of last year, and no doubt exceeds it. Yet the deficiency of receipts at the Southern ports amounts to 331,000 bales, which, estimating the bales at 400 pounds each, and the average price at 10 cents per lb., or \$40 per bale, gives a total value for the whole retained in the country of \$13,250,000. This, added to the value of the deficiencies in the receipts at tidewater, Albany, gives the following results :

Value of breadstuffs and provisions in the interior, not forthcoming at Albany,	\$17,729,986
Value of cotton not forthcoming at the sea-ports.	13,240,000
Total,	\$30,969,986

"As the crops have exceeded in amount those of last year, and taking the deficiencies at other points, we may safely estimate the probable total value of produce retained in the interior at about \$35,000,000. This amount of agricultural produce must come forward and be superadded to the business of next spring, after allowing it to be equal to what it was during the past spring, and thus greatly augment the trade of the season, giving increased activity to transportation lines, and renewed life to all branches of trade.—*Country Gentleman.*

**Prospects for Produce.**

Farmers, be not deceived by the stories of the hiring press. You have all, no doubt, seen predictions of low prices in the spring, and confident boasting of the present unparalleled abundance. Now, in plain English, these writers assert what they know to be false. There is no likelihood of lower prices in the spring, and there is not so much produce in the country as Eastern people have been led to believe. But we have already pretty thoroughly exploded these stories; and wherever the *Prairie Farmer* circulates, the sharpers have found a stumbling block in their way.

A fact to which we have not yet alluded we now wish to lay before our readers. According to the best information which we have been able to gather, ten per cent. of the present potato crop in Indiana, Illinois, Missouri, and Kentucky, was not gathered when the recent severe weather came on. Of course, but a small portion of it will be worth anything. Much corn was destroyed by the same storm; and

the disastrous freshets in New England and in the Middle States materially reduced their marketable products. Subsidiary to this, the accounts from Europe confirm advices received six weeks ago. Do these facts indicate reduced prices? We deeply regret all these losses; but, notwithstanding, the truth may as well be known.

It will not in the least benefit the poor consumers if farmers sell their breadstuffs at half price. The sharks will, in any event, grind the last cent out of poverty. And if, at such a time as the present, farmers should compel the middle men to pay ten cents per bushel more for wheat, it would simply be ten cents per bushel taken from their profits.

Bread in Chicago costs the consumer to-day just as much as it cost him one year ago, and it would cost him no more if wheat were one dollar per bushel. Our aim is, to let the farmer be paid more, and the middle man less; and thus bring the producer and the consumer nearer together.—*Prairie Farmer.*

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### Thinning Forests.

The slovenly method of cutting wood where it can be got with the least trouble is to be reprobated. Nor do we believe the method sometimes recommended of cutting a forest clean as you go, is a good rule for all cases. It may be advisable in those cases where the forest is uniformly old and most of the trees are growing worse, rather than better, for timber. But this is the character of very little forest land in the older States. Almost all of it is second or third growth of timber, and contains a great many thrifty saplings from five to ten years old, that, if cut will only put back the subsequent crop of wood to many years.

Silas Brown, one of the best farmers in Massachusetts, says in a recent communication in the *New England Farmer*, that he has been in the habit of cutting wood for market for forty years as one of the most profitable productions of his farm, and that he has paid critical attention to the succeeding growth. "At the time of removing the old growth, young white pines had sprung up, and had advanced in all sizes, from one foot up to some twenty feet in height on some of my lots; on other lots there was no appearance of young progeny. We were very careful to save all the young possible, instead of indiscriminate havoc. The advantage of saving the saplings will be readily discovered by every practical woodgrower; the young trees, carefully preserved from injury while cutting off the old growth, will soon take a start and be in advance of the forest, which is to spring from the seed, some five to fifteen or twenty years. This advance in the growth is no small item in the farmer's income. On lots where none of these young saplings had taken root, I have been careful to select suitable seed-trees of the varieties I wished to promulgate,

and spared one or more on every acre I wished to replenish with a future growth. In this way I have been saved the labor of sowing the seed or transplanting the trees, and have found, about the third or fourth year from the cutting off, a plentiful supply of young trees showing themselves, but greatly in the rear of lots where the young saplings were saved."

This is valuable testimony from an intelligent farmer, who has seen the working of both methods upon his own woodlands. The care of our forests, so rapidly waning in all the older states, is a matter that can receive attention none too soon. The time is not distant when they will be far more valuable than they now are for timber, if not for fuel. Fuel we may indeed find elsewhere, but nothing can ever supply the place of wood in many of our manufactories. The farmers of the present day should consider the wants of posterity in this respect, and should hand down their farms to their heirs as well wooded as they received them from their fathers. There are large tracts of country in this State, and indeed in the rougher portions of all the States, that may be more profitably kept in timber than in anything else. It is a poor inheritance to hand down to one's heir a miserable, worn-out farm, or only stripped of its soil but denuded of its forests without any available means to restore its wasted energies. The rocky hill tops and ridges should always be kept in forest. The plains and valleys below will have a milder climate and be more productive for their protection. Where these elevations have been stripped they should be immediately sown with seeds of forest trees. Too much of this rough land has ready been cleared up in many parts of the country.

*American Agriculturist.*

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### To Sweeten Rancid Butter.

An agriculturist, near Brussels, having succeeded in removing the bad smell and disagreeable taste of some butter, by beating or mixing it with chloride of lime, he was encouraged by this happy result to continue his experiments, by trying them upon butter so rancid as to be past use; and he has restored to butter the odor and taste of which was insupportable, all the sweetness of fresh butter. This operation is extremely simple and practicable for all. It consists in beating the butter in a sufficient quantity of water, into which had been mixed 25 to 30 drops of chloride of lime to two pounds of butter. After having brought all its parts in contact with the water, it may be left for an hour or two; afterwards withdrawn and washed anew in fresh water. The chloride of lime used, having nothing injurious in it, can safely be increased; but after having verified the experiment, it was found that 25 to 30 drops to two and a half pounds of butter, were sufficient.



*From the Ohio Farmer.*

### The Culture of Domestic Animals.

1. I had the opportunity for many years in succession, to observe the process thro' which a small herd of buffalo, in the park of a friend, passed away from the full-blooded animals, down through successive stages of conformity to common cattle, until all trace of the Buffalo, to a common observer, had disappeared. In this case, the common bulls refused to serve the buffalo cows; but the buffalo bulls would serve the common cows—a fact which was attributed to the well known odor of the buffalo cow being offensive to the common bull, but not *vice versa*. The buffalo blood, which was pure and unmixed as blood could be, hung well and was long visible; but it disappeared, to an unskilled eye, after about five crosses.

2. If you will breed the bull dog, to the pointer; or the chubby black Berkshire hog, to the gaunt white Irish Grazer; or the Saxon sheep, to the black-legged South down; or the improved shorthorn Durham bull, to the common cow of the country; or the thorough-bred race horse, to a cold-blooded mare; in all these cases, and in every similar case, with every creature in the world, the result which will follow, in the first cross will be, that all the young of the half blood, will be very similar to each other, in each kind, and partake very much of the appearance of both parents, only the highest bred parent making the young most. After this, if you breed back to either side exclusively, the blood on the other side will disappear at about the 5th cross; liable, however, to these two exceptions. 1. That *very* high bred races, (a buffalo, for example, which may have a thousand pure descents,) will show occasional outbursts, long after the blood seems lost; and 2. That there is a general but obscure drift towards the inferior of the two original races. If on the other hand, you breed these half bloods together, in each kind, you will see immediately, the greatest diversities; and after a few descents, say, as in other cases, five, it is hardly possible to tell what they are, though the blood remains as it was, half and half.

3. There is nothing of which I am more confident, than that you cannot keep up a mixed race of any sort of domestic ani-

mals, without eventually resorting to the pure blooded animals, on both sides, by means of which you made the mixed animal, at first. There may be many good reasons why mixed animals should be cultivated; why we should breed them, and use them; about which I have nothing to say here. But as to making new, good and permanent varieties, in this way, that is not possible; because we are not able even to perpetuate with distinctness, any mixed race—much less to give it such stability as to improve it at a given mixture. So that, by these processes and principles, as well as by all I have said before, we have new proof of the real nature and effects of in-and-in-breeding. In these last cases, it is a perpetual struggle of nature, against crosses she does not relish; in the unmixed cases, it is a perpetual co-operation of nature, in favor of pure results. In both cases her principle, her process, and her result would be similar, if she were undisturbed in her operations.

4. In a state of nature, the process amongst all *gregarious* animals is after this fashion. A male animal will become the master of a herd or flock, more or less considerable, and will beget most of the young in that herd or flock, as long as he can maintain his supremacy. How long that may be will depend mainly on the duration of life, in that kind of animal. In animals that *pair* at the breeding season, a totally different process obtains; but as far as our knowledge extends, the first *pairing* is always of a male and female, of the same litter; and the pair thus united, are only separated by death. In the former case, *direct* in-and-in-breeding, but continually changed after a few descents, is the ordinary process of re-production; in the latter case, the very closest *collateral* in-and-in-breeding, unbroken through life, is the usual process. In neither case, however, is barrenness even known to be produced; and in both cases, an absolute uniformity of reproduction occurs, which far exceeds anything that culture can boast of.

5. I have proceeded with a pretty large flock of Saxon sheep, say, an average of 100 ewes, after this wise: about once in four or five years, I would put fifteen or twenty rams to them at that period when the whole flock was most certain to be impregnated in the shortest time, and therefore, in part by every buck. Then, for a

few years, I would select two or three rams, (not of the large lot,) and breed exclusively from them. Then repeat the whole process; and so on, for about thirty years. During the whole period, the flock kept in this manner, perfectly to itself, exhibited no sign of depreciation. I commenced with two bucks and twenty ewes, of pure blood. As the ewes of this variety of sheep will have young at two years of age, and very often at a year old, I have in this experiment, had at least fifteen generations pass under my notice. I may add, that at the end of thirty years, I bred the flock to two Rambollet bucks, from which I have three crops of young; but I do not perceive any other change than such as belongs to the two families of sheep. I consider the experiment conclusive, that a flock of sheep does not require any outside cross, in order to avoid in-and-in breeding.

6. I have a very deep impression, that hereditary qualities which are *personal*, are transmitted most *across the sexes*.—Qualities which belong to a whole race, may be expected in every one of that race. But if one or more of these qualities happen to exist in a most striking degree in a particular animal of that race, this excess of excellence is *personal* to that animal; and I mean to say, this *personal* quality will be propagated by that animal, *in the young which is of opposite sex to itself*, rather than in the young of its own sex. If you breed to a male, no matter of what race of animals, whose qualities you consider remarkable, be sure to keep his *female* issue, and *vice versa*. If you want a male as near like him as you can make it, breed back one of his female get to him, and save the male issue. Keep the matter to yourself, if you like, as the Collings in England did. They went mainly by the eye and by guess; I have told you, as I think, the *principle* in this section.

#### AGRICOLA.

#### Adoption of a Dog instead of its Foal by a Mare.

A thorough bred mare belonging to a gentleman in Mid-Lothian was expected to foal on the 25th of last June. On the 8th of June she was observed to be unwell, showing great stiffness and pain in the legs, and cold generally all over the body.

The udder was distended to an unusual size with milk, and there was wax at the teats; there was not, however, the least loosening of the ligature at the root of the tail, but everything was as close and firm there as if she were not in foal. The owner thought it advisable to call in a veterinary surgeon, who bled the mare, and gave it as his opinion that she would not foal for ten days at soonest. She was tied up in a stall till the wound would be healed, and was watched day and night. In the same stable with her were another horse, and three terrier dogs which lay under the mangers, one or two of them always being under her manger, for which she contracted a liking.

On the 10th June she showed no uneasiness or symptoms whatever of foaling. The person in charge of her, however, having occasion to leave the stable for an hour in the afternoon, was surprised to find on his return a lively foal tumbling about the stable, and the mare quietly eating. Assistance was immediately procured; the mare was loosed and brought to the foal, which was carried to a loose-box, with her close behind it. The foal, though small, was very spirited, and was soon on its legs gamboling about the house, and always attempted to get near its mother. She, on the other hand, positively refused to have anything to do with it, and every time it approached her, rudely pushed it away, so much so as to alarm those who were in charge that she would injure it. This continued for several hours without any apparent change in her feelings towards the foal. There being an abundant flow of milk from her, the twitch was put on so as to allow the foal to suck a little. While in the loose-house she always showed great restlessness, and looked impatiently at the door, as if expecting something.

It was thought that, by removing her to the stable again, she would more readily adopt the foal. This was accordingly done; the foal was carried and laid where it was first found, and the mare allowed to go loose. Another horse was in the stable, which was three-stalled. Immediately on entering the stable she began to smell along the floor, apparently in the tract taken by the foal before it was discovered. This she continued to do till she reached one of the dogs, which was lying

under the manger of the stall usually unoccupied, and which it was thought, though it could not be positively asserted, was lying under her manger when she foaled. She disregarded the foal lying in the same stall, and evinced the most lively satisfaction at meeting with the dog, uttered fond maternal neighings to it, licked it, and gently pawed it as if wishing it to rise. The dog not relishing these unaccountable caresses, retreated to another stall, whither it was immediately followed by the mare, which continued to show manifestations of affection for the dog. Care was always taken to have the foal presented to her when she was standing over the dog. She did not show the same dislike to it then, but still her indifference to it was every now and then evinced by pushing it away when it came between her and the dog; and if the dog was in one stall and the foal in the other, the mare remained with the dog, and totally disregarded the anxious cries of its own offspring.

All the dogs were then removed from the stable, and the poor foal was as little thought of as it was in the loose-box; but was kept close before the mare, with a man in attendance to prevent its being injured by her. And every two or three hours the twitch was applied and the foal allowed to suck, the mare being made to understand that the relief she felt from the drawing of the milk was given by the foal. After some hours' absence, the adopted dog accidentally entered the stable, when the mare, on seeing it, became quite frantic to get near it, wreaking her vengeance on the foal by knocking it over. This accident, however, was prevented a second time by closely confining the dogs in a separate house. By degrees, as the milk accumulated on her and evidently gave her pain, of which she was relieved when the foal sucked her, she took more kindly to it. Gradually the use of the twitch was dispensed with, and she allowed the foal to suck without any interference whatever; and in twenty-four hours after she foaled the trouble spent on her was amply rewarded by her adopting the foal, and becoming so fond of it as not to allow it for one instant to be out of her sight, and to show her displeasure if any stranger came too near it.

It was not thought advisable to remove

the other horse from the stable, as in cases where mares refuse to take their foals, their maternal feelings have sometimes been quickened by the presence of another horse. As we never heard or read of such a curious case of adoption, we have thought it proper to be more than usually minute in our description of this one. We have often seen ewes, bitches, and cats, when near paturition, adopt lambs, puppies, and kittens, which happen to be near them; but we never heard before of an animal refusing to acknowledge its own offspring and adopting another animal of a different genus.

*Journal of Agriculture.*

### Roofs and Roofing.

Although the good people of Maine live in a lumber country, they find it expensive building, and we presume that they also find the most expensive part of a building, taking the item of repairs into consideration, to be the roof.

Shingles of different kinds are now pretty generally used for the external covering of roofs. The first cost of this material does not seem to be very great, varying from four to eight cents per square foot, according to quality and mode of putting them on.

In old times, for some reason or other, shingles used to last much longer than at present. They were then almost invariably made of the best of cedar, and shaved by hand very smoothly. At present shingles are made of almost every kind of wood, sawed into shape by the shingle machine. Hence, little care is taken in regard to the quality of the material, as to the "rift" and soundness, for it can be sawed into shape. We think that, on an average, ten years is as long as shingles last. At any rate, a roof laid with the best of sawed shingles will need repatching by the time it is ten years old.

We formerly supposed it to be a good plan to make a roof pretty tight before laying on the shingles, but experienced builders now take the opposite doctrine, and their reasons appear to be founded on reason. When a roof is made tight, say they, by matching the boards or laying them snug together, there is no chance for the shingles to dry when they become wet. During rains the shingles absorb wet, especially sawed shingles.

If the roof beneath them be tight they cannot dry so readily on the under side as they would if it were not tight, they therefore decay. The boarding of a roof should therefore be open. One builder of our acquaintance recommends roofs to be boarded with boards only four inches wide, and these laid three inches apart.

In such a case shingles laid upon them would have a chance to dry on the under side when they become damp or wet, which is pretty often the case.

Since writing the above, the following from the *Rural New Yorker* has come to hand. We shall recur to the subject of "Roofs and Roofing" again, and we invite communications from others in regard to the matter. It is one of no small importance.—*Maine Farmer*.

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 "As shingles are in general use in this State, and will be for some time to come, it is important to know the best method of making and laying them. I have been a practical builder for a number of years, and from my own observation, I think there are great errors committed in making shingles, and in roof-boarding to receive them. It is a very common mistake in making shingles to cut down the tips to the thickness of a mere shaving, and from one-fourth to half an inch narrower than at the butts. Now, in width this order should be reversed, and every shingle made one-fourth of an inch widest at the top, and the thickness of the latter, should be three-sixteenths for a shingle eighteen inches in length. The butt should be at least three-eighths of an inch in thickness—a half would be better—as a thin shingle becomes very brittle when only partly worn. A shingle should never exceed 4 inches in width for a good roof, as a wide one will crack at the butt much worse than a narrow one. Roof boards should not be over three inches in width, and are better an inch and one-fourth thick.

"Many still adhere to the old custom of placing the roof-boards close together, and I have known some to match them, thinking to have the boards carry off the water if shingles would not. This must be called pound foolishness, as shingles made of most timber would soon decay, especially if shaded by trees as many houses are.—I have made good roofs with boards six inches wide, leaving the same space be-

tween them, and nailing the shingles to them near each edge. Shingles shaved from good pine, if made in the form I have recommended, undoubtedly stand at the head of wooden roofing. Sawed pine shingles also make an excellent roof, if boarded so as to give them plenty of air from the under side, and each space between the butts about one-fourth of an inch.—Cedar, chestnut, hemlock, &c., also, make a very good roof.

"*Guilford, N. Y., Nov. 1857.*"

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 For a number of years past we have urged our carpenters to board the roof in such a manner that the shingles may have a chance to dry. Lay the boards *apart* we tell them, or, what is still better, make use of strips four or five inches wide, that the shingles may soon dry after a storm. We are in the practice of building annually, but we find it quite difficult to persuade common workmen to lay on the boards so open as to let in the air freely. They incline to press them together as close as a floor is pressed where grain is to be threshed.

We are aware that many master carpenters are in favor of laying the boards apart; still their workmen hold back and prefer to lay all the boards as close as possible. A few weeks ago we gave most explicit directions how to lay the boards on the roof of a building, and the master carpenter agreed to have the work done in the manner here advocated; but in his absence the directions were totally disregarded; and we, on our return from a journey, were left to sigh and moan at the neglect of our positive orders. We must pay for this work because we did not hire a man to stand with a whip over the stupid men who were too old to catch a good idea.

We incline to think from actual trials, that shingles will last at least one-third longer when the boards under them are quite open, than when they are pressed close together, as many careless workmen press them. Let the employer see to this in season, or he may be cheated with a poor roof, though his materials are good.

It is not necessary to lay new shingles once in ten years in case the workmen have any brains.

Closely connected with this system of boarding the roof, is the laying of the shingles on the boards. It was an old rule

among carpenters to expose but about one fourth of the shingle to the weather, let the shingle be long or short. The other three-fourths were covered up where they had but little chance to dry. And in a season like this, they could not be dried through during the short intervals between the storms. *Four and a half inches* of the best and longest shingles were exposed to the weather, and the remainder tucked up to be kept warm, as some nurses tuck up babies in a warm room. The workmen still insist that there should be at least three thicknesses; so that when the joints they make fail in one place, they may prove good in another.

When you buy pretty good shingles, *four* inches long, lay them *six inches* to the weather, and make your workmen take care and lay them well. They will last longer laid in this mode than when they are lapped on so as to lie only *four* and a half inches, for this plain reason, that they are sooner dried after a storm.

Then look to the economy of this mode of laying. You save just one-fourth in the cost of shingles, and one-fourth in the labor of putting them on; while your roof will last at least one-fourth longer, by giving it some chance to dry.

We are almost tired of talking on this subject, because it is so difficult to persuade some men to change. Why, "they have learned their trade," they say, and must go by rule.

Yet, while this class of workmen are never willing to change, we have another class who are continually changing and running into every new scheme and new form of building. They run their employers into extravagant expenditures, and all come out at last at the little end of the horn. It would be well for builders at the present day to look ahead and count the cost before indulging so much in imaginary improvements.—*Mass. Ploughman.*

### How to Make Hens Lay in Winter.

Some writers on domestic poultry seem to think that there is no limit to fowls laying eggs, if they are managed and fed in a certain manner. This is fallacious, as a hen can be made to produce but about 100 to 150 eggs a year, if fed ever so well, and kept ever so warm in winter. Fowls are like the soil, they must have rest, and if we keep them laying all winter, they will be about barren in the spring, when

it is the season for eggs, and when they are most used. It is a good plan to keep fowls warm in winter, and to feed them with fresh meat, when it can be done cheaply; but it is not advisable to force them to lay too much.

We have been led to make these remarks, on seeing an extract from Bement's *Poullterer's Companion*, as annexed:

#### TO HAVE EGGS IN WINTER.

The question is often asked, "Why cannot hens be made to lay as well in winter as in summer?" They can, to a certain extent; but they require as a condition, that they be well provided with warm and comfortable lodging, clean apartments, plenty of food, pure water, gravel, lime, fine sand, and ashes to roll and bathe in.

There seem naturally to be two seasons of the year when hens lay; early in the spring, and afterwards in the summer; indicating that if fowls were left to themselves, they would, like wild birds, produce two broods in a year.

Early spring-hatched birds, if kept in a warm place and fed plentifully and attended to, will generally commence laying about Christmas, or even somewhat earlier. In cold and damp this is not to be expected, and much may, in different seasons, depend on the state of the weather and the condition of the bird.

It is a well-known fact, that from November to February (the very time when we want eggs the most) they are to many a bill of expense, without any profit. To promote fecundity and great laying in the hen, it is necessary that they be well fed on grain, boiled potatoes given to them warm, and occasionally animal food. In the summer they get their supply of animal food in the form of worms and insects when suffered to run at large, unless their number is so great as to consume beyond the supply in their roving distance. I found it advantageous, in the summer, to open the gates occasionally, and give the fowls a run in the garden and in the field adjoining their yard, for a few hours in the day, when grasshoppers and other insects are plenty. I had two objects in view; one to benefit the fowls, and the other to destroy the insects. It will be found that the fecundity of hens will be increased or diminished, according to the supply of animal food furnished.

Hens moult and cast their feathers once every year, generally commencing in August and continuing till late in November. It is the approach, the duration and the consequences of this period, which put a stop to their laying. It is a critical time for all birds. All the time that it lasts, even to the time that the last feathers are replaced by new ones, till these are full grown, the wasting of nutritive juices, prepared from the food for the very purpose of promoting this growth, is considerable; and hence it is no wonder there should not remain enough in the body of the hen to cause the egg to grow.—*Rural American.*

*From the Genesee Farmer.*

### How Can Setting Hens be Taught to Forsake the Lazy Habit?

Make a small open pen, of laths, or some similar material, in one corner of your hen house, about eight inches wide, and of any convenient length and height. Let one of the laths or slats be so secured that it may be easily taken out or moved one side, so that a hen may be conveniently passed into or taken out of the pen. On the bottom of this pen, and running lengthwise through it, set up a couple of laths on edge, and fasten them about the same distance from each other and from the sides of the pen. Run a small perch *across* the pen and the work is done. When a hen wishes to set, put her in there. She will soon find that she can walk leisurely upon the floor, or roost comfortably upon the perch, but she can't *set* without "riding on a rail," and that, they seem to think, isn't decorous. The length of time for which they will have to be confined will vary somewhat, and in obstinate cases it may be necessary to put a few pegs or tacks into the edges of the laths. N.

### Negroes and Cotton.

The New Orleans *Delta* estimates the number of Slaves at the South at over three and a half millions, and their aggregate value, at present prices, at fifty sixteen hundred millions of dollars. The Cotton plantations in the South it estimates at about eighty thousand, and the aggregate value of the annual product, at the present prices of cotton, is fully one hundred and twenty-five millions of dollars. There are over fifteen thousand Tobacco plantations, and their annual products may be valued at fourteen millions of dollars. There are two thousand six hundred Sugar plantations, the products of which average annually more than twelve millions. There are five hundred and fifty-one Rice plantations, which yield an annual revenue of four millions of dollars.

*Southern Cultivator.*

*From the Valley Farmer.*

### To keep Rabbits from barking Trees.

EDS. VALLEY FARMER.—The time is approaching when we must secure our young fruit trees against the incursions of rabbits, or have them killed or very much injured. I will give you the simple plan that I and some of my neighbors have pursued with complete success. I tear up old newspapers in strips fifteen or eighteen inches long, and wrap them around the body of the tree, commencing at the ground, and securing it with common twine. The paper will withstand all the rain that falls on it, and I never knew a tree injured by rabbits that was thus protected. Another advantage of the plan is that it can be so quickly done—one person can tie up a hundred trees in two hours.

B. A. RIVES.

*From the Valley Farmer.*

### An Essay on the Rearing, Management and Food of the Horse.

EDITORS OF THE VALLEY FARMER:—It is not my intention to make invidious distinctions between the various breeds of horses in our country, yet I must think that, without some attention to blood and judicious crossing, the best of management, in other respects, will prove a failure, and be unprofitable to the raiser.

It may be thought that the thorough bred race stock belongs entirely to the turf, yet we think a cross of the thorough blood is best for almost every purpose, and the thorough bred mare is the best brood mare, for all purposes.

She being crossed with the Northern trotter, the produce will be a superior harness horse,—with the Canadian or pacer, you will have the best saddle horse,—with the draft-horse, you will have a horse of more action, durability, longevity and a better farm horse, than if a full draft horse, and so for the above purposes, the cross will produce a better animal, with more symmetry and action than he would be without the thoroughbred cross; and finally a mule from a thorough bred mare, will be a better animal and command more money in market than a mule from a large, coarse mare; hence the propriety of obtaining the most thorough bred mares to breed from.

There should be great care and judgment exercised in selecting a sire, who excels in those parts in which the dam is defective, as there is no horse perfect; a sire may be defective in those parts that excels in the dam, unless your object be to produce a saddle, or fast-moving animal. In that case, let the dam be fine as she may, never breed to a horse that has a defective shoulder or limbs. As it is an admitted principle that like begets like, great care should be exercised, that the sire be a hale, sound animal, free from those diseases which are hereditary, such as blindness, thick wind, ring bone, &c. Let him be possessed of a noble and docile disposition. A horse with a sullen, slyish and vicious disposition can never be made a pleasant and safe animal.

A great and very common error in breeding is to cross a small, compact dam with a large, overgrown sire, the object being to increase the size of the offspring above that of the dam. The result is a disproportioned colt, having, perhaps, the large head and feet of the sire, with long legs, and the light body and short neck of the dam. The sire may be somewhat larger than the dam, but it is certainly somewhat safer to have the dam a large, lengthy animal, (but compact) with ample room for the fetus to develop, bred to a horse of medium size than the reverse. We think there is as much, if not more depending upon the qualities of the dam, than there is upon those of the sire, and if we had a small, coarse bred mare we would dispose of

her to those who differ from us in opinion, rather than breed her. A mare may be moderately worked while in foal, until within a few weeks of the time for dropping it. She should not be too fat, or the foal will be lean and weak at first. She may be moderately worked while suckling. She should be fed on grain in a trough low enough for the colt to learn to eat. It should be handled and learned to lead while suckling, and left in the best condition for weaning and standing the winter. It should be well stabled with the privilege of running on a rye field the first winter. If it is suffered to become poor, its limbs will twist; it will become stunted in growth, which no after treatment will fully counteract. Nor should it be kept too fat after the first winter, nor forced to maturity too soon, or you may give it a kind of hot-bed growth which will greatly impair its future value.

There are many fine animals greatly injured (especially in their breeding qualities) by being forced to maturity too soon, to exhibit them at our agricultural fairs.

#### BREEDING.

At two years old the colt should be broke, and may be put to light and moderate work; to do which, a kind, soothing course should be pursued; very much such a course as a judicious parent would pursue with his child—first teaching it that you are its friend, and do not wish to hurt it. It will soon love and fear you and as soon as it learns your will, it will obey you. This discipline can be exercised with the bridle and whip, very light applications of the latter generally prove sufficient. Accustom it to, and familiarize it with the saddle before it is mounted, and with the harness before it is required to draw. The horse is the most noble and docile of all animals, and with the above course of treatment carried out with proper discrimination, there will be but little trouble in making him a pleasant and profitable animal, unless he be one of those vicious exceptions to the general character of his species—in which case a little more severity will be required. There has been many a fine animal neglected until he was grown and then forced into subjection by cruelty, which is shocking to humanity, and thus become heart-broken before subdued, and rendered comparatively useless. The colt should not be oppressed with heavy burthen until fully grown. It may be ridden at two years old by a light rider moderately, but if too much weight be put upon it, it may injure its spine, crook its limbs, make it sway-backed and a stumbler. A filly may be put to service much sooner than a colt, as she matures quicker.

#### FOOD AND WATER.

Our rich soil and its products, together with our mode of farming in Kentucky, do not com-

pel us to resort to the many articles of food which are generally used in Europe, such as beans, barley, roots, chaff, &c., nor does economy require it. We prefer selling the barley to the brewer, feeding the groom with the beans, and the chaff, &c., to an inferior class of stock. We think corn, oats, rye, hay, grass and fodder cheapest and best food for horses; and if properly prepared and judiciously given are all that the horse requires as food, but the too common practice of feeding corn in the ear as a constant diet is objectionable. It is neither healthy for the horse; nor is it economical. It is liable to make him feverish and constipated in his bowels, and predisposes him to scratches and other diseases, while at the same time experience teaches us that eight ears of corn crushed is a better feed and will keep a horse in better condition than twelve fed to him without crushing. There is no better feed for the horse that works on the farm than rye meal or crushed corn, mixed with cut rye-straw, or sheaf-oats cut fine, and (if not freezing weather) moistened with water. The rye-staw is the most economical, will keep the horses' bowels in better condition than the cut oats, and is but little inferior to it in nutriment. There is no feed that will put flesh on the horse quicker. This feed is objectionable for the saddle or harness horse, when quick hard work is required. It distends his stomach too much, causing it to impair the action of the lungs, making him short-winded and sluggish, impairing digestion and rendering him liable to choleric. For such service feed him on shelled oats, hominy and corn-blades. Horses should be fed regularly, their diet should be often changed, and not more given at a time than they will eat. It is better for them to quit with appetites than to leave food in their troughs to sour. The work horse, (when stabled), should have his manger always filled with good hay or fodder. Clover hay is best, if properly cured, but a dusty, mouldy article is inferior to rye-straw. Corn-blades is perhaps the best provender that the horse can have and he is fonder of it than any other; but it requires more labor to save it than comports with good economy unless it be in a season of drought like the present, when the grass has failed. When the horse has to be stabled, it is good to soil him occasionally with clover or grass, but when practicable we prefer his running out at night and selecting for himself.

The horse should be regularly watered as often as he needs it; he frequently suffers for want of it, especially in winter. Do not turn him out to eat snow, from laziness to water him. It matter not how much, or upon what you feed him, without a bountiful supply of water he will necessarily be in a bad condition. Cistern or pond water, is better than spring or well or any hard water; he will have a better coat and be less liable to gripes, after using the one, than he would if required to drink the other.

## STABLING AND MEDICINE.

There is nothing more common or much more cruel than to see this noble animal, after rendering his master good service, returned fatigued to a contracted and filthy stall, in a dark and unventilated stable, and there tied by the neck with a rope, inviting him to hang himself to get clear of such cruelty. A stable should be constructed so as to afford a free circulation of air and light, with large, roomy stalls, (closed stalls are best), but if for want of room it be necessary to tie the horse, have a leather head-stall with a rope rein; pass it through an augur hole in the manger, attach a weight to the lower end. The horse can then stand up to the trough, or step back and lie down without being entangled with the rope. Pure fresh air is necessary for man or beast, and if a stable be closed the air will be hot and foul; and being often breathed it becomes contaminated, injuring the circulation of the blood, impairing the healthful action of the lungs. It destroys digestion and health. Although a free circulation of air is essential to the health of the animal, care should be exercised that the wind blow not upon him; a fresh current of air blowing upon his head will give him cold, cough, &c. We hope the day is past when any rack will be permitted to remain in a stable, from which the horse will fill his eyes with hay seed, and then pull down and waste his hay and fill his trough with litter. There should be good mangers constructed with troughs by their sides roomy and tight that feed be not wasted; and to insure regular salting, which is very important, have a box constructed within reach of the horse, and keep in it a constant supply of salt and wood ashes, or a little lime, that the horse may use it at pleasure. We think the lime or ashes promotes appetite, prevents worms and adds to general health. The importance of light in stables is not generally duly appreciated. Man or beast confined for a time in a dungeon and then brought into a glaring light, the eyes will be sensibly affected by it, and a frequent repetition of it will produce blindness. There is nothing more injurious to the eyes of a horse than to be confined in a dark, filthy stable, straining his eyes through a crack or small opening to behold the light of day. Hence the propriety of removing all filth and smell from his stable. The ammonia produced from the decomposition of litter, urine, &c., in a close, confined stable, fermented and heated, produces a noxious vapor, very injurious to the eyes and general health of the horse, and if disease, such as chronic cough, inflammation of lungs, break out among your horses, where such impurities exist, it is not to be wondered at.

## MEDICINE.

The old adage of an ounce of preventive being better than a pound of cure, is very applicable in the treatment of horses, no less so than in the treatment of the "ills to which flesh is

heir" in man. There is no doubt but it is with horses as it is with the human family in the hands of quack doctors, that more are killed than are cured by the administration of medicine. The common practice among farmers is, when a horse is sick, to say, "Oh! he has the cholick," or that he has the bots, (a disease, the dangerous existence of which is much doubted by modern writers) and they will go to work without a proper knowledge of his disease, and give him drench upon drench of whiskey, gunpowder, turpentine and other inflammatory drugs to cure him of a cholick or bots, when perhaps the disease is inflammation of the bowels, if so, every drench they have given him is like pouring oil upon fire, and served rather to aggravate than to mitigate or allay the disorder, so that the horse is much more apt to die than if left to nature for a cure. But it is not my object to write a treatise on Medicine at this time, but merely to show the danger and cruelty of administering medicine to the noble animal without a proper diagnosis, and the practical advantage of preventing diseases over that of an attempt to cure them by an application of inappropriate remedies. And we now assert without fear of contradiction, that if the horse be properly fed upon judiciously prepared food, regularly watered, stabled, salted, kindly treated and made comfortable as above directed, he will render good service until old age, without much disease.

The horses used by the farmer, such as saddle, harness and the plough and wagon horse, should receive the same general treatment (and food) with the exception above made, where quick, hard work is required. The voluminous nature of our subject prevents us from giving more than some general outlines in the present essay. Much must be left to the common sense of the farmer, without which he will not succeed well with horses or any other stock.

L. L. D.

*Jefferson Co., Ky.*

## Fertilizers for Fruit Trees.

In relation to appropriate fertilizers for trees a diversity of opinion prevails. All agree that certain substances exist in plants and trees, and that these must be contained in the soil to produce growth, elaboration and perfection. To supply these, some advocate the use of what are called "special manures," others ridicule the idea. I would suggest whether this is not a difference in language rather than in principle; for in special fertilizers, the first make simply those which correspond with the constituents of the crop; but are not the second careful to select and apply manures which contain those elements? and do they not, in practice, affix the seal



of their approbation to the theory which they oppose? Explode this doctrine, and do you not destroy the principle of manuring, and the necessity of rotation of crops? Trees exhaust the soil of certain ingredients, and, like animals, must have their appropriate food. All know how difficult it is to make a fruit tree flourish on the spot from which an old tree of the same species has been removed.

The great practical question now agitating the community is, how shall we ascertain what fertilizing elements are appropriate to a particular species of vegetation? To this two replies are rendered. Some say analyze the crop; others the soil. Each, I think, maintains a truth; and both together, nearly the whole truth. We need the analysis of the crop to teach us its ingredients, and that of the soil to ascertain whether it contains those ingredients; and if it does not, what fertilizer must be applied to supply them. Thus, by analysis, we learn that nearly a quarter part of the constituents of the pear, the grape, and the strawberry, consists of potash. This abounds in new soils, and peculiarly adapts them to the production of these fruits, but having been extracted from soils long under cultivation, it is supplied by wood, ashes or potash, the value of which has of late greatly increased in the estimation of cultivators.

Among the arts of modern civilization, universal experience attests to the great advantage of "mulching" the soil around fruit trees, as a means of fertilization and of preservation from drought and heat, so common with us in midsummer. In illustration of this, experiment has proved that on dry soils, where the earth has been strewn with straw, the crops have been as large without manure as with it, where evaporation has disengaged the fertilizing elements of the soil.—MARSHALL P. WILDER, in *Patent Office Report*.

REMARKS.—Mr. WILDER is President of the Pomological Society, and an intelligent, experienced fruit grower. His opinions, therefore, are entitled to great consideration. He is evidently in favor of "special manures," and of analyzing the crop and the soil in order to determine the "fertilizing elements appropriate for a particular species of vegetation." Entertaining somewhat different opinions, we would most respectfully point out our

reasons for rejecting the doctrine of special manures, as taught in the above article.

Fruit trees, and all our cultivated plants, are composed of precisely the same elements, some fourteen in number, four of which are termed organic, and ten inorganic. The former exist in the atmosphere, and may be inhaled by the leaves of plants; the latter are obtained only from the soil. If every one of these ten inorganic elements do not exist in the soil, no plant fit for food can grow on that soil, unless the lacking element or elements are supplied in manure. On this point all are agreed. Furthermore, we are willing to admit that it matters not whether the missing element is supplied in ordinary barn-yard manure, or in any artificial manure, or in its chemically pure state. To ascertain whether any particular soil is deficient in one or more of the elements of plants, it has been proposed, as Mr. WILDER states, to "analyze the soil." Such an analysis is unnecessary, for if all plants contain the same elements, and no plant can grow on a soil unless it contains every one of the inorganic elements of plants, it follows that if the soil *does* produce a single spear of grass, a Canada thistle or a white daisy, it contains every one of the inorganic elements of plants. So that to "analyze the soil," for the purpose of ascertaining whether it is destitute of any element of plants, is unnecessary, if any plant is growing on the soil. If, therefore, a soil does not produce so much as a blade of quack-grass, and cannot be made to produce a plant of any kind by tillage alone, it may be necessary to analyze it, in order to ascertain which of the ten inorganic elements are missing;—on any other soil it is certainly useless.

"But," says the advocate of soil analysis, "the soil may contain enough of every element for the production of one species of plant, and not enough for another species which require a larger quantity." This is true. *But no soil analysis can determine the point.* For instance, a soil ten inches deep would weigh about ten thousand tons, gross, per acre. A crop of wheat of fifty bushels per acre contains 40 pounds of phosphoric acid. This 40 pounds mixed up with 22,400,000 pounds of soil, is one part of 560,000. Now, we have had some experience in determining

phosphoric acid, and we always think that when duplicate analyses of the same soil agree within *one ten thousandth*, the analyses have been properly made. Certainly no one who has ever made a phosphoric acid analysis will pretend for a moment that he can determine one part in over half a million. No chemist, therefore, can tell whether a soil contains phosphoric acid for one hundred bushels of wheat, or only for fifty. And we hazard nothing in saying that he cannot tell whether it contains enough for 1000 bushels or 2000 bushels.

We do not, therefore, "need the analysis of the crop to teach us its ingredients," nor "that of the soil to ascertain whether it contains those ingredients;" for the ingredients of all crops are the same, and all soils that produce any plant at all contain all these ingredients, and analysis will not tell us whether they exist in sufficient quantity or not.

There is another view of the doctrine of "special manures," which must not be overlooked. It is now generally admitted that all our cultivated plants contain the same ingredients, and that therefore, there is no "special" element required for one plant, that is not needful for the growth of another. But there are some plants which contain much more of some particular element, than other plants. For instance, according to the analyses of RICHARDSON, (See Annual Report of the Progress of Chemistry, Part 5, London edition, page 318,) the ash of the cherry contains 1.12 per cent. of soda, that of the pear 8.52, and that of the apple 26.09. The advocates of special manures would from this recommend a soil or manure for apples which contains a large quantity of soda, while for cherries—the ash of which contains little soda but abounds in potash (51-85 per cent.)—they would recommend a soil or manure which contains little or no soda and much potash. This is in fact the theory of "special manures," as understood by all intelligent writers on the science of manure.

Baron LIEBIG, though not the originator, is the popular promulgator of this doctrine. Its plausibility, and its learned advocate's reputation, gave it immense popularity when first announced, and we cannot be surprised, however much we may

regret, that it forms the woof or warp of nearly all our agricultural and horticultural literature of the past fifteen years. Indeed, so true is this, that Mr. WILDER may well exclaim: "Explode this doctrine, and do you not destroy the principle of manuring?" Nevertheless we cannot close our eyes to the fact that however plausible it may be, this doctrine is simply a *deduction*. There is no experimental proof of its truth, while there are many isolated facts which show that it is not true in all cases.

So far as fruit trees are concerned, we are without experimental evidence either to sustain or refute this doctrine. We are, therefore, left to analogy. The experiments made during the last thirteen years at Rothamsted have, among other things, thrown much light on the chemical requirements of wheat and turnips. The ash of wheat contains 50 per cent. of phosphoric acid, that of turnips 10 per cent. LIEBIG has said, and the doctrine of "special manures" would lead us to expect, that wheat requires a soil or manure much richer in available phosphoric acid than that required for turnips. But what is the fact? It has been proved that for the growth of turnips, a soil requires a much greater quantity of available phosphoric acid, than to produce wheat! This fact cannot be doubted; the experiments that have been made at Rothamsted and in hundreds of other places, and the general experience of British farmers, place it beyond all cavil. We could mention other facts that militate against the doctrine of special manures, but it is unnecessary; for as there is not a single well established fact that sustains the doctrine, and as it has been proved erroneous in the only case in which it has been fairly tried, we have no certainty that it may not be equally untrue in all other cases.

While, as we have said, there are no carefully conducted experiments, that demonstrate the truth or fallacy of this doctrine, as applied to horticultural plants, there are many observed facts that would of themselves throw doubt on its correctness. Thus the vine contains a large proportion of potash, (according to CRASSO, the wood contains 44.15 per cent. and that of the juice of ripe grapes 71.85 per cent.) and we should expect that the manures best suited for grape vines would

be those containing much potash. But is it so? We believe practical experience answers *no*. The carcasses of animals, abounding in ammonia and phosphoric acid, are found to produce an astonishingly beneficial effect on the growth of grape vines; and bone-dust, which contains a large quantity of phosphoric acid and ammonia, and very little potash, is a highly esteemed manure. A short time since, an intelligent gentleman of this city, a close observer and successful fruit-grower, informed us that a few years ago he buried a considerable quantity of horn-piths beneath his grape vines. Having to remove his vines sometime afterwards, he found that the roots had pushed through the soil to the horn-piths, and literally encased them with a dense mat of small fibrous roots. The vine was evidently fond of this kind of food, and imbibed it in large quantities. Now, horn-piths abound in ammonia and phosphoric acid, *and contain very little potash!* And thus, while as Mr. WILDER says: "Nearly a quarter part of the pear, [RICHARDSON found 54.69 per cent. of potash in the ash of the pear,] the grape and the strawberry consists of potash," we are not warranted in concluding that it is the potash which 'abounds in new soils,' that "peculiarly adapts them to the production of these fruits." The turnip plant abounds in potash, (from 40 to 50 per cent. of the ash) while it contains comparatively little phosphate of lime; and yet potash is not a special manure for turnips, and is never used for this purpose, while phosphate of lime has an astonishing effect on them—one manufacturer alone, as he himself informed us, selling 12,000 tons of superphosphate of lime for this purpose, last year, in Great Britain. All who have used superphosphate of lime for turnips, must have observed that when the turnip came in direct contact with the superphosphate, an immense number of small fibrous roots are thrown out, as in the case of the vines mentioned above. Furthermore, we have seen the roots of the turnip pushed out, laterally, between three and four feet long, in order to reach superphosphate. Now we know that superphosphate is a *special* manure for turnips, and is it not probable, from the facts mentioned above, that phosphates and ammonia, rather than potash, are the *special*

manures for the vine? Do not these facts warrant us in asking such influential writers on horticulture as Mr. WILDER, to give this whole subject of "special manures," and soil analyses, a careful reconsideration?

From the Farm Journal.

### Impositions Upon Farmers.

MESSRS. EDITORS:—An examination of the published volumes of our different agricultural periodicals for the last eight or ten years would demonstrate with unmistakable clearness, a leading characteristic of a very large number of our farmers, viz: an earnest seeking after the *new*; the *progressive*. This spirit of inquiry is commendable, and if it were possible to have it always directed in the proper channel, far more desirable results would long since have been attained. But, unfortunately, in this mad chase after novelties—this spirit of speculation, for such is perhaps the most appropriate title for it—how many have lost not merely their cash investments and their time, but their confidence not only in that which is of doubtful utility, but in those things which sound judgment and ample experience have demonstrated to be valuable and important.

There are in every class in society many speculators—Barnums—men who do a thriving business with little or no other capital than the credulity of those upon whom their impositions are practiced, and it is to be regretted that farmers are not exempt from the tricks of these imposters. Compared with these cheats, Barnum sinks into comparative insignificance. He realized perhaps more from his exhibition of the "Woolly Horse," "Joyce Heath," &c., than they generally do from their worthless wares, but their victims suffer to an incalculably greater extent. Twenty-five cents enabled any one to gratify his curiosity in regard to the "Woolly Horse," but an hundred times that amount is insufficient to remunerate the farmer, who invests time, labor and money in very many of these agricultural speculations, only to find in the end that he has been miserably duped. Who does not remember the *Morus Multicaulis* speculation, and the ruin it entailed upon thousands of honest, well-meaning men. The Rohan Potatoe was an imposition of the same character; and almost every day startling

announcements are made of the discovery of some new variety of wheat, or corn, or grass, or fruit, which, in point of productiveness, easiness of cultivation, peculiar adaptation to almost any soil or climate, has never been equalled. Of course the prices asked for these rare commodities are commensurate with their advertised value. For instance, one nurseryman announces the *Dioscorea Batata* at one dollar per single tuber. Another, with a more reasonable conscience, asks only the fourth of that sum. Iverson's Rescue Grass can be procured, I understand, for \$5 per peck. The Wyandot Corn, the value of which remains yet to be tested, finds large purchasers at the modest rate of a penny per grain, or about *eight hundred dollars* per bushel. I might multiply these instances indefinitely; but enough has been said to convince every reasonable reader that the glaring representations usually given of these novelties in the agricultural world should be received *cum grano salis*.

In agricultural implements the same mania prevails, though perhaps to a less extent. The spirit of invention stalks erect through the land, and new implements for the use of the farmer are patented every day. Shrewd men are engaged to sell territorial rights, and fortunes are frequently realized on inventions as worthless, so far as practical utility is concerned, as it is possible to conceive the wood and iron of which they are composed to be. It is only a few months since territorial rights for a corn sheller were sold in the vicinity of Pittsburg to the amount of \$60,000. Large sums of money were invested in its manufacture, and visions of profits at the rate of hundred's per cent. indulged in. Alas for the vanity of human expectations! Three or four months have sufficed to explode the bubble; and those who invested their money in it, whether as purchasers of rights or of machines, will now have an opportunity of reflecting upon their folly, and of profiting by their dear-bought experience. And this is only one instance out of a hundred I could name.

Do not things of this kind demand serious consideration on the part of those who really desire the advancement of our agricultural interests? It will be difficult, I admit, to devise a plan by which the credulous and unwary may be protected

from these impositions; but it appears to me that much might be done by the editors of our agricultural journals towards so desirable an end. If they would come to the fixed determination to recommend no seed or fruit or implement, unless convinced by the most unimpeachable testimony that it was really meritorious, very few of these imposters would succeed in filching from farmers so much of their hard earnings.

W. L. R.

February 1856.

#### Wood Sold in Small Quantities.

We copy the following from the New York Daily Times:—Few are probably aware of the extent to which the practice, so common to the cities of selling wood in small quantities at the groceries, has come to be adopted in this city. One establishment engaged in bundling pine wood, will convey an idea of the amount of wood daily cut up and bundled for sale in this way. Mr. John T. Barnard, and an associate, formerly kept a yard for the sale of wood and charcoal. In 1856 he commenced to put up pine wood in small bundles, for sale to families, and to the grocers to sell again. He began with an old blind horse, using an endless-chain power, and employed three or four boys. His sales amounted to only two or three hundred bundles per week, for the first month. Shortly, however, the little bundles of kindling wood become popular, and in three months the business doubled; he increased the number of his hands, and in six months the business had doubled again. He now sells from four to seven thousand bundles a day, and sometimes nine thousand. He has a double-cylinder engine, which runs four steam saws, and machinery for splitting up the wood. It is then carried by means of an elevator to the upper stories, where some thirty boys, of the ages of 10 to 16 years, are kept constantly busy putting it into compact bundles of about eight inches in diameter, which are secured by rope-yarns. The yarns are all tied a given length, and they are then fitted in, and wedged strongly by a little wooden maul, which each boy uses for the purpose. Each boy can put up from 200 to 300 bundles in a day, and receives 16 cents per 100 bundles. They earn from \$2 50 to \$3 50 per week, and

are paid off on Fridays. Some smart boys go to school, and work after hours, making good wages. One little fellow apparently not over eight years old, who is too small to reach up to the bench, sits on top of it and works away industriously with his little maul. He generally earns a dollar and twenty cents a week. The boys sing and whistle at their work, and appear very cheerful. They are the poor children of the neighborhood, some of them troublesome enough to manage at home, being accustomed to severe usage there; but kind treatment and the stimulus of wages keeps them in good subjection. One family is wholly supported by four of the boys who work in the place. Grocers send their wagons and buy from 1000 to 2000 at a time, paying \$1 50 per hundred, and retailing it at 2 cents the bundle. Dealers in charcoal also buy up large quantities of it with which to supply their customers. Families also purchase wood as they require it for use. During the panic there was a slight falling off in the sales, more from the want of money than any other cause, but it is now brisk again. Many families who heretofore have bought two or three loads of wood at a time, now step into the grocer's and buy it by the bundle. The sale is increasing, and he says he could easily dispose of 10,000 bundles daily if he could get it made up. They also sell the same kind of kindling wood by the box; the price being about 30 cents the box. Mr. Barnard has had the contract for supplying the public schools of New York with kindling wood. He has this Fall sawed and split up three thousand cords of wood for these schools.—*Exchange.*

**NEW METHOD OF GOVERNING VICIOUS ANIMALS.**—Mr. B. F. Shannon, of Berkshire, Franklin Co., Vt., has written us that he has discovered a new plan for subjugating unruly animals, as follows: Put into a leather bag two or three pounds of stones, and tie it fast to the tail of the animal. He says he has never known one to jump a fence while undergoing such treatment.

Peas are of unknown origin.  
Vetches are natives of Germany.  
The Garden Bean, from the East Indies.

### North Devons—The Proper Cattle for the South.

We have observed with much care during a series of years, the capacities of the planting portions of the South for the sustaining of neat cattle, and the adaptation of all the breeds introduced, to the treatment usually given to them. The short-horns were more generally introduced, and the least beneficial results have been effected by this breed. The Ayrshires, a smaller animal, and hence better adapted to the "short commons" of the South than the colossal Short-horns, have in some locations done better; but they, with the Short horns, labor under a natural defect in their breeding, which renders it impossible to constitute them the basis of an ameliorating breed, or of a profitable cross on the common cattle of the country.—The Shorn-horn is a composition breed, incorporating such a variety of blood and habit, that the crosses ran into an endless variety of form and color. The Ayrshire is only a miniature Short-horn, bred with a view to develop more largely, according to size, their milking capacities, and labor under the same natural disabilities as to a composition of blood, rendering their crosses more objectionable than the pure bred native cattle, which have at least a constitutional habit, enabling them to sustain life in our climate, and to glean a substance from our short pastures. The North Devons, to our notion, are better adapted to the improvement of our stock of neat cattle, than any of the improved breeds. They are an original breed, and without cross or admixture of blood, they have sustained an improving superiority amongst the best breeders wherever they have been introduced and bred with care. The least admixture of Devon blood shows its mark, and it is so indelible that it can never be obliterated—the rich red color and distinguishing peculiarities of form and carriage always prevailing. The following points of this breed have lately been adopted by the New York State Agricultural Society, and were drawn up by Mr. Roch, who is an acknowledged judge of cattle:

"POINTS OF NORTH DEVONS.—Purity of blood, as traced back satisfactorily to importations of both dam and sire, from known English breeders, or as found in the lately established Herd Book for North

Devons, and without this, an animal cannot compete in this class.

4. The Head should be small, lean and bony, the forehead wide, flat, or from a fullness of the frontal bone over the eyes, somewhat dishing; the face, straight; the muzzle, fine; the nostrils, open; the lips, thin and rather flat.

4. The Nose of a light delicate orange color.

4. The Eye should be bright, prominent and clear, but mild and gentle in its expressions, as indicative of that spirited, but tractable disposition so necessary to cattle that must bear the yoke; a beautiful orange colored ring should invariably surround the eye.

2. The Ear—thin of a rich orange color within, of medium size, with a quick and ready movement, expressive of attention.

2. The Horns, light, tapering, of a waxy color toward the extremity, and gaily as well as symmetrically placed on the head; the occipital bone narrow, thus bringing the base of the horns nearer together.

2. The Neck of medium length, somewhat light in substance, very clean and well set upon the shoulder.

14. The Chest—deep and round carrying its fullness well back of the elbows, thus affording, by the aid of a springing rib, abundant internal room for the action of the thoracic viscera, the heart and lungs, and that too without an *extreme* width forward, and between the points of the shoulders, which might interfere with the action of the animal.

4.—The Brisket—it being assumed that it adds nothing to the internal capacity of the chest—must not overload the breast, but be sufficiently developed to guarantee a feeding property, attended with a full proportion of fatty secretion.

4. The Shoulder is, in this breed, a very beautiful and important point, and should in a *degree* approximate in form to that of the horse. It should take a more sloping position than is found in most other breeds, with its points less projecting and angular, and the blade bone more curved, thus blending with and forming a fine wither, rising a little above the level line of the back.

3. The Crops full and even, forming a true line with the somewhat rising shoulder and level back, without either drop or hollow.

9. Back, loin and hips, broad and wide, running on a level with the setting on of the tail.

5. The Rumps—lying broad apart, high and well covered.

2. The Pelvis—wide.

3. The Twist—full and broad.

6. The Quarters long and thoroughly filled and between the hooks, or hip bones, and the rumps; with a good muscular development down the thigh to the hocks.

3. The Flank—moderately deep, full and mellow in proportion to condition.

5. The Legs not too short, and standing as square and straight behind, as may be compatible with activity. The bone quite small below the hock and knee; the sinews large and clean, with fore-arm well developed.

2. The Carcass round and straight; its posterior ribs almost circular, extending well back, and springing nearly horizontally from the vertebra, giving, in fact, much greater capacity than would at first appear.

1. The Tail, at its junction, level with the back, long, very slender in its cord, and finishing with a tassel of white hair.

1. The Color, in its *shades* and *degrees*, is more or less governed by fashion; but in the Devon is always red. Formerly a rich blood-red was the favorite color, and a test of purity; and now a somewhat lighter color is in vogue, approaching rather nearer to that of the *South Devon*, which is a larger, coarser, stronger animal. In all cases the color grows lighter round the muzzle, while a dark mahogany color, verging almost to a black and growing yet darker about the head, always was a very questionable color for a *true North Devon*, more especially when accompanied by a dark nose.

1. The Hair should be short, thick and fine; and if showing on its surface a fine curl, or ripple, it looks richer in color, and is supposed to indicate a hardier and more thrifty animal.

1. The Udder should be such as will afford the best promise of capacity and product.

3. Carriage—the Devons having, from their excellence in the yoke, another destiny besides that of the butcher's block, it is all important that the animal's carriage should indicate as much, but to obtain this, something of the heavy, inert, square-

ly moulded frame of the merely beefing animal, must be relinquished for a lighter and more active frame.

15. Quality—on this the thriftiness, the feeding properties, and the value of the animal depends: and upon the touch of this quality rests, in a good measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft, flexible and substantial feel, and when beneath the outspread hand, it should move easily with it and under it, as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the animal "ripens." A thin papery skin is objectionable, more especially in a cold climate.

POINTS OF THE DEVON BULL.—As regards the male animal, it is only necessary to remark that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contra-distinction to the cows, the head of the bull may be shorter, the frontal bone broader, and the occipital flat and stronger, that it may receive and sustain the horn; and this latter may be excused if a little heavy at the base, so its upward form, its quality and color be right.—Neither is the looseness of the skin attached to and depending from the under jaw to be deemed other than a feature of the sex, *provided* it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin long and broad, and the whole muscular system wide and thoroughly developed over the entire frame."

We have introduced this scale of points in order that those who may desire to become acquainted with the Devons, may know when they can lay their hands on a thorough bred and genuine animal. No

one should attempt to improve the common stock of the country without using a thorough-bred male animal, for the great "object of improved breeding is to diminish, or, if possible, remove the defects of live stock, and to acquire and perpetuate desirable properties." To improve ordinary stock, then, the great importance of using a pure-blooded male is apparent, for it is not to be supposed that the females will possess the qualities and attributes which will lead to perfection in their progeny. We are prepared to claim for the Devons better results, and more rapid improvement, when crossed on our natives, than can be effected by any other breed; and we predicate this claim because, as before stated, they make a clearer impress of their blood than is transmitted by any other breed introduced for the purpose of improvement. The improved Devon is now a different animal from the coarse-skinned, wiry-haired, black-nosed animal, which is frequently palmed off on the unsuspecting as the *simon pure*. Upon the application of the hand to the hide of the Devon in fair condition its quality can be determined by its soft and mellow condition. This mellowness is indicative of the aptitude of the animal to fatten, and is esteemed an important requisite, as an animal is regarded as "almost valueless, though it be possessed of perfect symmetry, if it cannot be made fat without very extraordinary keep." In the Devon, the great object of the cattle breeder, "to get as little bone as possible," can be achieved. Large, round leg-bones, indicate a coarse and illy-bred animal, as much so as that flat and small bones are the indexes of fine qualities and superior breeding. In all the requisites for constitution, thrift, hardihood, aptitude to fatten on short keep, it is conceded that the Devons excel any other breed of cattle wherever they have been introduced.—In color, symmetry of form, grace and elegance of carriage, they possess a like superiority over all British cattle.

We have recently examined several of the most celebrated herds in the United States, and now write this hasty sketch of the breed, from an honest conviction of their superiority in all respects, to all the improved breeds of cattle—as well in their pure state, as when crossed on all other breeds. We also express our opinion that the improved milking Devons,

such as are to our knowledge bred by Richard Peters, Esq., of Atlanta, Ga., Geo. Patterson, Esq., of Maryland, Dr. W. R. Holt, of Lexington, N. C., and A. G. Summer, Pomaria, are the best dairy stock for Southern plantations, which we have seen anywhere. They yield a fair quantity of milk, and that of the very best quality. Good milk is a great blessing; but the poor bluish fluid which is yielded by the forty-quart cows so much boasted of, cannot be of much value, either for the table or the churn. A good Devon cow will give from fifteen to twenty quarts of rich milk, which will yield butter per head with the milk of any other breed. We are aware that the milk of the Alderney or Jersey cow, is the richest in the world; but allowing that an Alderney cow will give eight quarts of milk, we know dairymen who will test the *last eight quarts* of a Devon's udder for butter-making, against this famous breed. This would, of course, be a fair criterion by which to judge the relative qualities of the breeds. The cut which we give is "Comet" (162), imported in 1851. For pedigree, see "Davy's Herd Book," page 144, vol. 2. Winner of the first prize for imported Devon bulls, in the Connecticut State Fair in 1855—the property of Linsley Brothers, West Meriden, Conn. As we make it a point to practice our precepts, we will change our neat cattle for Devons, as fast as it will be practicable to get them of the right stamp, which at present, is only to be done by speaking in time for such animals as are wanted. Female Devons cannot be had from the best breeders at any price, as they are all desirous of increasing their herds. We saw three hundred dollars refused for a heifer three months old, and a similar offer for the forthcoming progeny of certain imported cows. This is a high price when we consider the rates usually paid for cattle in our country; but when we see the late sales of short-horns at more than ten times that figure, we are really startled.—Well-bred Devon bull-calves, can be purchased at prices ranging from \$150 to \$250. These are, however, the best of the race, and to such as may wish to purchase, we refer them to the gentlemen above named, as being altogether reliable in their transactions. This article is penned as much as an answer to an accu-

mulated correspondence from various individuals, making inquiries as to the best bred of cattle, as it is to give our own opinion to the public. [South Carolina Agriculturist.

### Tea Drinking.

If the question be narrowed down to "Tea or no Tea," we advocate the weed. The world will be happier and healthier by the moderate use of any of the China teas, in their purity, than without them. The immoderate use of cold water is prejudicial to health, whether as a drink or a lavement, and so is the immoderate use of bread and butter. It is the argument of a fanatic to say that because the excessive use of anything is injurious, it should therefore be discarded altogether.

Chemistry decides that the essential elements of coffee and tea are identical, and are nutritious. Tea is a stimulant, and so is any other nutritive article. That which imparts no stimulus is not fit for food.—An ordinary meal stimulates the pulse to a greater activity by five or ten per cent.

Tea, being used warm, and at meal time promotes digestion by its warmth, as any other warm drink would do. Any cold drink, even water, taken at meal time, arrests the progress of digestion, until it is raised to a heat of about a hundred degrees, and if that arrest be too long protracted, convulsions follow, and sometimes death—as has happened to children many times by eating a couple of hard boiled eggs hastily, or, upon an empty stomach, or, indeed, eating much of any indigestible article.

Thus it is, that, so far as the use of tea at our meals banishes the use of cold water at meals, it is a safeguard. Late and hearty suppers destroys multitudes, either outright in a night, or in the insidious progress of months and years. It is almost the universal custom to take tea for supper. It is a stimulant. It aids the stomach in digesting more than it would have done, just in proportion to its stimulating qualities. And as all eat too much at supper time, the general use of warm tea as a drink at the last meal of the day is beneficial in the direction just named.

True wisdom lies in the moderate use of all the good things of this life. It is stated that at a tea party of sixty old wo-



men in England, it was ascertained that they were the mothers of eight hundred and sixty-nine children.

The presumption is, that these women were tea drinkers habitually, and it is equally inferable that they did not drink it very "weak;" yet they were healthy enough to be old, and healthy enough to be the mothers of large families. An isolated fact proves nothing, but this one is suggestive.

It is then safer and healthier to take a cup of warm tea for supper, than a glass of cold water. With our habits of hearty suppers, it is better to take a cup of warm tea than to take no drink at all.

By the extravagant use of tea, many persons pass their nights in restlessness and dreams, without being aware of the cause of it. We advise such to experiment on themselves, and omit the tea altogether at supper, for a few times, and notice the result.

If you sleep better, it is clear that you have been using too much tea, in quantity or strength.

In order to be definite, we consider the following to be a moderate use of tea: a single cup at each meal as to quantity; as to strength, measure it thus: put a teaspoonful in a hot teapot, pour on a quart of boiling water; two-thirds of a tea-cup of of this, adding a third of cream, or boiling milk, or hot water, with sugar or not; this is strong enough.

We believe that such use of China teas, by excluding cold drinks at our meals, and by their nutritious and pleasantly stimulating character, may be practised for a lifetime to very great advantage, without any drawback whatever; coffee also.

We believe that the world and all that is created upon it is for man, and that the rational use of its good things will promote the health and happiness of all mankind.

*Hall's Journal of Health.*

*From the Prairie Farmer.*

### Wire Fence.

*Ed. Prairie Farmer*:—I noticed in the *Prairie Farmer* of November 26th an article under the head of "Wire Fence—Information Wanted, &c.," I propose to respond to the call: The wire fence I consider the most durable and cheap that can possibly be built. As regards the number of wire, No. 9 is the best adapted to fence building. For one hundred rods of

fence, three wires will require three hundred pounds—cost, \$18 75. Four wires, four hundred pounds—cost, \$25 00. Five wires, five hundred pounds—cost, \$31 25. For one hundred rods of fence, two key posts at each end, and one tie post in the centre—six inches square, or larger, may be used; then forty-eight common posts set in the ground, thirty-three feet apart; then three spring posts, about two inches square, between every two posts, secured to hubs about twenty-two inches in length, set in the ground with wire, of which the fence is made.

For tightening the wire, &c.,—there are keys and wrenches, made on purpose for the business, and they render the process of constructing fences very rapid. The above is a description of T. D. Burk's patent elastic, expansive and contractive wire fence. Having been engaged for quite a length of time in putting up this kind of fence, on contracts, and in selling rights for farms, towns and counties, I should be very happy to furnish E. P. C., or any other enquiring friend. Further information if desired. Plans of the fence, &c., may be obtained by addressing me at Onarga, Illinois.

H. W. JUDKINS.

### Wire Fence.

This brings to our remembrance a conversation we had the other day with Col. Horace Capron, of McHenry Co., who called at our office. His fence costs him 82 cents per rod. He builds it of posts and wire, using No. 6 wire. Sets his posts 8 feet apart, runs his wire through staples drove in each post, draws tight and fastens at the end posts. He thinks there is no necessity of an apparatus to regulate the expansion and contraction of the wire, if it is of sufficient size. He is a stock man, and has his fence thoroughly tested by his cattle, and those of others which roam the prairie. He has had no trouble since using this size of wire, and the cost for repairs is comparatively nothing. Take into account the labor of hauling, handling, fitting, putting up and repairing a board fence, and compare it with the ease with which the wire fence is made, its durability and beauty, and we cannot vote in favor of the board fence.—*Ibid.*

*From the Valley Farmer.*

### California Soap.

Five lbs. of white bar soap, or yellow, if white cannot be had; four lbs. of sal soda; one half lb. of borax; one ounce of ammonia, mixed with twenty-five quarts of pure soft water, rain-water is best. The water should be heated and the soap is dissolved in it. The other articles should be dissolved in a separate vessel in a few quarts of water, a few quarts out of the twenty-five quarts. When all is dissolved, mix them, stirring the mess well as they are poured together.

It can be made by dissolving the sal soda, borax and ammonia, in a few quarts of water, then pouring it into about 25 quarts of common home-made ley and soap grease, stirring it thoroughly to mix it well.

It is chiefly valuable as a washing soap.

To use it, the clothes must be put to soak the night before washing, in a hot suds, and covered over closely with a thick blanket or something of the kind to keep them warm all night. Wring them out in the morning, stirring and squeezing them pretty well in the suds; put them into a strong suds and boil them 15 or 20 minutes; take them out into a tub of water, wring them from this, stirring and squeezing them, to get out the suds and dirt; look over the wrists and dirtiest places and articles, they will need perhaps a little rubbing on the board; rinse them well in another water and hang them out. A little rubbing will make sure work. The saving of labor in the use of this soap is very great. Its cleansing power is searching, leaving the articles very white. It does no injury to the clothes. We speak from the experience of several families who have used it for years and would not give it up if their clothes could be washed for nothing in the old way. It saves the wear of hard rubbing upon the clothes which is fully equal to the wear of using. The cost of this soap is trifling.

#### For Washing.

Cut into small pieces a pound of bar soap; put it into a tin pan, or iron pot, with one quart water. Keep it hot, but not boiling, till the soap is dissolved, and stir in two large spoonfuls of powdered borax. When cool, it will again harden, and you will have double the quantity of soap, and better for washing all kinds of clothes. The labor of rubbing is very much diminished. Four spoonfuls of borax added to each gallon of soft soap, when first made, will greatly improve the soap for washing, and also prevent its eating the hands, as new soap is apt to do.—*Prairie Farmer.*

*From the Michigan Farmer.*

#### On Cutting off Large Limbs from Fruit Trees.

*Mr. Editor:*—I am induced to write you, more to elicit inquiry and reflection, than to urge any reasons or discovery of my own, and I am reminded to do so, from having seen my neighbors doing what I fancy to be a very wrong thing; I may be mistaken, and partly, therefore, I write.

I allude to the almost universal practice of sawing off indiscriminately, large and small limbs from apple and other fruit trees. I think our orchardists do not forbid it, in fact I do not know but they encourage it. My own orchard has been trimmed of large limbs, and grafted

in large limbs (which is the same thing in effect) very much. My examination and reflection lead me to the conclusion, that no limb should be cut from a tree, which will not grow over in three to five years; for the reason that the season cracks of the cut end will admit water which will percolate to, and down the centre of the tree, and cause a premature decay and death. It is well known, that forest trees having had limbs violently broken off soon decay; hence the natural thinning of the forest. It is also well known to pine lumber men, that defects in that valuable tree, the pine, are caused by the violent breaking of limbs, causing water to run in as soon as the end begins to decay, unless it first grows over, rotting down frequently to the root, and also up, usually about half the distance. The natural age of a healthy apple tree is at least one hundred years; and I think the average age of our shockingly bad trimmed orchards will not exceed thirty years. The difference is the magnitude of the evil, if it be one.

Yours, &c.,

J. L. KELSEY.

*Washington, April 27, 1857.*

#### REMARKS.

Pomologists, and well informed fruit growers, universally deprecate the practice of cutting off large limbs from fruit trees. It is only esteemed allowable, when it becomes necessary to change the tops of large trees; where a badly placed limb has been suffered to remain till it becomes a serious injury to the tree; or where a worse wound is threatened from the splitting down of a branch.

A healthy, vigorous tree will usually survive the shock of such amputations, even when rudely done; but in order to be sure not to leave any weak points consequent upon the excision, several small branches should be removed, if possible, instead of one large one, thus providing for the earlier healing of the wounds.

Large trees, when left to themselves for a few years, usually become crowded with branches, shading the interior, causing the death of the central branches, and seriously injuring the quality of the fruit; in such cases a thorough pruning is indispensable; but after cutting out the crossing branches so far as to secure the necessary openness of centre, it is better to *cut back*, rather than trim up the leaders; thus strengthening the central growth, and keeping up a suitable proportion of bearing wood throughout the entire head of the tree, instead of running out long, lean branches, bearing only at their extremities.

The same, or a similar process, but applied with greater severity, is also employed to induce the production of new wood where trees have become stunted from age, overbearing, or neglect; in this case, however, it should be assisted by the thorough culture and manuring of the soil as far as the roots extend.

The best time for regrafting old trees is pro-

bably May, or early June; as then the healing process commences more promptly. To renovate old trees, they should be cut back during February or March. It should be done, without fail, before the swelling of the buds.

To prevent decay, all large wounds should be covered with a coating of varnish, made by dissolving gum shellac in alcohol. It should be kept in a wide mouthed bottle, and applied by means of a sponge, or swab, attached to the cork. It should be kept always corked, to prevent the evaporation of the alcohol. It dries almost immediately, and is perfectly water proof. One or two applications are sufficient to protect the largest wounds; and it adheres so closely to the wood as not to be disturbed by the new growth, while grafting wax, or any other similar preparation, would be crowded off in the process of healing. Wounds on healthy trees, if kept well covered with the above varnish, will usually heal without decay. It should be remembered, however, that a bearing tree cannot be regrafted without the loss of from four to six years of its time, and, possibly, the receiving of a shock from which it may never fully recover, consequently all the motives of facility, economy, and safety, urge attention to the matter while trees are young. L.

### Tomato Culture.

The cultivation of this vegetable is comparatively recent in this country. Thirty years ago it was hardly known, except in the gardens of the curious, and among those seafaring people whose business had led them to the West Indies and to South American ports. It has been much longer established in France and Spain, and was introduced into those countries from their South American possessions, where it originated. Thousands of acres are cultivated to supply the demands of our large cities, and so abundant is the yield of the vines, that in their season they are among the cheapest of vegetables. They are also made into catsup, pickles, sliced and dried for winter use, and lately it has become quite common to seal them up in cans, in which they preserve their flavor admirably, and can be had fresh and good the year round.

There are numerous varieties, of which the large, smooth, red is the most popular for market, and the mammoth much the best flavor for family use. This we have raised for several years, and have frequently had them two pounds in weight. The plant will perpetuate itself in the garden, unless pains are taken to destroy it. But this is a careless method of growing them, and they deteriorate in size and quality, unless the seeds of the best fruit are saved and planted.

They are commonly forced by planting single seeds in pots in February, and putting them out the last of May, already in blossom. The pot is then well filled with roots, and as none

are broken in turning them out, they get along rapidly, and give fruit in July. These potted plants are to be had of the market gardens at this season, and a dozen of them will supply a common family.

For the main crop for pickling and for preserving in cans, seeds sown the first of this month will mature sufficiently early. When the plants are put out about four feet apart they should have frequent hoeings, to facilitate the forming and ripening of the fruit. Most of the blossoms are put out within two feet of the roots, and the shortening-in of the plant forces its energies to fruit bearing. The fruit will be larger under this treatment, and will be some days earlier.

Some cultivators lay brush down for the vines to run on, and others tie them up upon a lattice. We think both these methods retard the ripening. The heat of the earth in August is of great service in maturing this fruit. The early plants should have a southern exposure under a fence or wall.—*American Agriculturist*.

### New Process for Preserving Timber.

Among the expedients adopted for the purpose of the decay of wood, the following, by the eminent French chemist, Dr. Boucherie, seems worthy of special attention. The following is his method of operation:

After the tree has been felled, a saw-cut is made across the center through about nine-tenths of the section of the tree. The tree is then slightly raised at the center by a lever or wedge, so as to open the saw-cut a little; a piece of string or cord is placed all round the edge of the saw-cut, and on lowering the tree again, the cut closes upon the string, which thus forms a water-tight joint in a simple and effectual manner. An auger hole is then bored obliquely into the saw-cut from the outside, into which is driven a hollow, wooden plug, to which a flexible tube is fitted. The tube communicates with a raised cistern, placed at a height of from 30 to 40 feet above the timbers that are to be prepared, and containing a solution of sulphate of copper. When the preparations have been completed, the liquid flows through the tube into the saw-cut in the tree, and forces itself along the log in both directions, driving the sap out at each end. As soon as the liquid has reached the ends of the log, the process is finished and the log is ready for use.

If the timber is required of the entire original length, the cross saw-cut at the center cannot be made, and instead thereof, a cap, consisting of a piece of board,  $\frac{3}{4}$  inch or 1 inch thick, is fixed on the end of the log by screws or clamps, and made, by means of a piece of string or cord, to enclose a space at the end of the tree. As the direction of the grain in the board forming the cap is transverse to that of the tree, the liquid cannot pass through the

cap, and the injection proceeds from one end of the log to the other.

In order to ascertain when the process has been continued for a sufficient length of time, so that the sap has been all expelled and replaced by the solution of sulphate of copper, a piece of prussiate of potash is rubbed on the end of the timber while in the damp state, and if the solution has reached the end of the log a deep reddish brown stain is produced, showing that the timber is thoroughly impregnated with sulphate of copper.

The sap expelled from the timber in the process of impregnation contains at most only 1-1000th part of organic matter in solution, and accordingly no inconvenience is experienced in employing it as a solvent for the sulphate of copper. It is, indeed, preferable to many kinds of spring water, particularly those containing lime, which decompose a considerable proportion of sulphate of copper. Troughs are therefore laid under the ends of the logs to catch the sap and the waste solution, which are conducted to a reservoir to be pumped up to the cistern and mixed with sulphate of copper to the proper strength.

The solution that has been found most effectual for preserving the timber is composed of 1 part by weight of sulphate of copper, and 100 parts by weight of water. The strength of the mixture is ascertained by a hydrometer, having a properly graduated scale. The specific gravity of water at 60° Fahr. being 1000, if 1 per cent. of sulphate of copper is added, the specific gravity of the mixture will be 1006, nearly.

The sooner the trees are prepared after being felled, the better, and it is therefore advisable to prepare them as near as possible to the place where they are felled. Trees felled at any time between November and May, may be prepared in May; but those cut down in May, or at any time from May to the end of November, should be prepared within three weeks from the time of being felled.

In the course of the operations carried out in the practical application of this process, the following facts have been ascertained:

All kinds of wood do not absorb equally, and the absorption of the liquid is more rapid in the sappy parts than in those nearer the heart of the tree.

The quantity of the solution forced into the timber is equal in cubic measure to at least one-half of the cubic dimensions of the timber. When a solution containing about 2½ lbs. of sulphate of copper in every 22 gallons, has been forced through a log, it appears, after allowing for the sulphate carried off by the sap, that every 35 cubic feet of wood have retained from 11 lbs. to 13 lbs. of sulphate of copper.

For a log about 9 feet long, the process of impregnation occupies two days, when the timber is newly felled and the solution is supplied by a head of about 3½ feet. If the wood has been

felled three months, three days are required; and if four months, four days are necessary to complete the impregnation.

Of different kinds of tree, those which possess most moisture are most easily penetrated by the solution; and of the same kind, those which have grown in the dampest soils. Hence the least valuable and cheapest kinds of timber are precisely those which give the best results when impregnated with the sulphate of copper.

[*Plough, Loom and Anvil.*]

#### Mares versus Geldings.

Farmers generally do not seem to be fully aware of the benefits which they might derive from the use of mares, instead of geldings. Farm work for horses is comparatively light. It is slow work. They are not necessarily exposed to labor which produces heaves, founder, spavin, broken wind, &c. These are all caused by unnecessary exposure, indulgence in eating or drinking, under unfavorable circumstances, or over driving; or, by two or more of these causes combined. It is true it is necessary for horses to perform some work upon a farm, which draws severely upon their nature; but, for the most part, farm work is steady, every day work, where horses can be well fed and cared for. Consequently mares are just as good farm workers as geldings.

If such is the fact, we propose to show farmers that they should, for their own benefit, keep mares for farm work, instead of geldings. With proper treatment, a good breeding mare will bring a colt every year, without interfering materially with the operations of the farm.

If the necessary pains have been taken to secure the services of the best stallion, the colt will be worth, when a year old, one hundred dollars; and, by the time he is old enough to use, he should be worth two hundred dollars. Well, if the colt is worth one hundred dollars at a year old, and the service of the horse costs twenty dollars, it leaves eighty dollars for the use of the money invested in the mare, as her labor will certainly pay for her keeping.— Now, if the mare is worth two hundred dollars, the eighty dollars would pay forty per cent. interest annually upon the investment, which is far better than loaning money at three per cent. a month, as there is, in this case, no usury law for debtors to avail themselves of; and then there is no more risk in the mare than there would

be in a gelding, nor so much, even. This is only the profit of one year.

The same can be done for a succession of years. And you can just as well keep a span of mares on your farm, and, after two or three years, have a span of fine horses to sell every year, as to keep a lot of stock which will neither increase in number and value.

Now, if you keep geldings, they are not so hardy naturally, we think, and do not live so long, and when once done with work, are of no manner of account to any one, and mercy requires you to knock them on the head. On the contrary, when your mares are advanced somewhat in years, or if they become lame from any cause, you can still, under ordinary circumstances, make them of great service to you by raising colts.

But there are certain kinds of labor for which the gelding is better adapted. They are generally, we think, more fleet, and consequently better fitted for roadsters.—They are also possessed of more muscular power, and, consequently, better fitted for heavy draughts.

We could find many purposes to which geldings are better adapted than mares.—We would, therefore, advise not only farmers, but all who do not severely task their horses with labor, to keep mares, by all means. We would also advise them to obtain the best mares, and the services of the best stallions, as the colts will sell for enough more to doubly pay the trouble and expense. And, besides the profit to the raiser of horses, the community would be benefited by an increase in number, and a decrease in the price of horses in a few years.

A farmer who keeps only two horses, and both geldings, will be compelled to purchase a team of some one else when his is done with work; whereas, if his team is composed of mares, he is preparing a team to take their places when they are turned to take their rest, either on account of old age, or for any other cause.

Farmers should keep as little non-producing stock around them as possible.—Everything should be made to pay the best possible per centage, with fair usage.—Then, we say to farmers, sell your geldings and purchase mares, and see if our advise is not good in the end.—*Northwestern Farmer.*

### The Present and the Past of the Implements of Agriculture.

At a period in our social history somewhat more than a thousand years ago, such was the poverty of the husbandmen and the wretched condition of husbandry, that it was the custom for six or eight individuals to club together their scanty means to procure a plough and oxen wherewith to drive it—hedging themselves round in their social organization with many quaint laws, which in the minuteness of their details showed how important to them was their association together, how miserably scanty their means, when they had to contribute their mite to the purchase of an instrument—and this so rude, that by enactment about the same period we have alluded to, no man was allowed to guide a plough unless he could first construct it, and make, moreover, the twisted willow withes with which his wretched oxen drew it.

In the year of grace 1857, a town of England, rich in historical associations, possessed of monuments older far than the period we have above referred to, welcomed with arch triumphal, and banners flaunting, the annual gathering of an agricultural society, numbering its members by thousands, contributing of their means, not like their brethren of old, to secure assistance in their individual operations merely, but to collect information and detail experience, and to scatter them broadcast over the land, that all might participate in the benefit of their association. At this great gathering of agriculturists, it will be the duty of the historian in after-times to relate, such was the condition to which the science of agriculture had attained, and such the extent of the mechanism which aided her operations, that of parties exclusively devoted to the making of these aids, no fewer than 154 exhibited nearly 1,000 implements, so wide in their range of operations that a classification of them would take up nearly 100 divisions. These two periods we may take to represent the past and the present condition of agricultural mechanism. Nor let us, in the strength and vigour of our riper years, think slightly of the humble efforts of those who have preceded us in the march of civilization. Who can tell how much of our life-energy we owe

to the agricultural societies of far-off times? Or how much of that greatness and social security we enjoy, to those who held their meetings in troublous days, with the sound, mayhap, of the war-shout in their ears, or the crackling of blazing roof tree and blackened house walls? And if there is truth in the doctrine of him who was not wont to write genially or kindly, that "He who can make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, will deserve better of mankind than the whole race of politicians put together"—let us not arrogate to ourselves the boast of having done all the good in this way. But with the recollection of our recent triumphs, let us, with all humility, remember the claims of the pioneers of the science. Nor will it read us a useless lesson if we recall to mind the truth, as we read—and reading, mix pity with our wonder—of the state of our science years ago, that the time may come when some future agriculturist may pursue with no less wonder accounts of what we are doing now. When he will think how little room there was for us to boast of our nineteenth-century doings. For the signs are now rising thick around us, to warn us that we are about to enter on a new field of discovery and mechanical application; and that however nobly our mechanics have met the requirements of our improved field-practice, the time is fast approaching—if indeed it has not already arrived—when more will be required of them. When new opportunities will be accorded them, of gaining fresh laurels and making new triumphs. We live, at all events, in a transition-time. Already, in imagination, the sound of the *steam* whistle drowns that of the *ploughboy*; the snort and puff of the engine mix mayhap, to ears sentimental, harshly with the sounds of rural life, and the black smoke cloud darkens the grain fields or the shocks of smiling corn. In many of our departments we have already got to the ultimatum—to that point beyond which, with our present implements, we can go but little further. Again, a careful, a philosophical survey of the whole range of our mechanism must force the—to many unwelcome, but not less unimportant—suggestion, that much of it is a mere necessity of a bad system of

working. We invent an implement at the expenditure of much thought; and the farmer at much cost of money uses it, to get rid of an evil which, by going more philosophically to work, we could prevent altogether. We expend much time and money in getting rid of effects and effects merely, without bestowing a thought on the cause. We would think little of the wisdom of the manufacturer who would prefer to buy, and keep working, at a costly rate, a machine to do away with certain prejudicial peculiarities in his materials, the presence of which could have been prevented by a little expenditure of trouble at some certain stage of his proceedings. Yet this is what many of us do in our field operations. We bring into use a complicated array of mechanical movements or tedious processes, to undo evils, which if we do not altogether cause, we do little to prevent, while prevention may be, or is in our power. And although able men and acute thinking minds have been for some time, and are now pointing the way to a more economical, because more philosophical way of working, such is the force of prejudice, and such the trammels of custom, we are content to go on in the same path which our fathers have trod before us, and use our implement or implements—we name no particular one just now, though we shall hereafter—because it has been used before us. "Our fathers did it. Say, are we wiser than they?" It is not philosophy—nay, further, it is not common sense, to keep perpetually striving to improve the construction or the details of an implement (mark here, again, that we refer to no one particularly, but take the question in its broadest phrase)—without, in the first place, inquiring whether its principle of operation is or is not the right one. If it is, then go on improving: too much cannot be done in this way. But if it is not,—an alternative worthy of consideration, truly—it is (not to mince the matter, but to speak English truth in an English way) but the greatest folly to trouble ourselves further about it. We may improve its details to enable us to do better work of such a class as it *can* do, than we could do without such improvements. We may get better work thus, but we can never get good. An implement in its principle bad, can simply, from being bad, in nowise give us good

work. We may—nay, we can—improve an implement till we get the very best work of its class; but with thinking men this is not the question. The point is, is this the class of work we want? Now, it seems to us as if at the commencement of the new era of agricultural progress, which we may assume dated from the first meeting of the Royal Agricultural Society, certain implements and modes of procedure were assumed, or tacitly agreed upon as right in principle; and that which was chiefly wanted was the improvement of their details. This system carried out, resulted in vast improvements being effected, and also in the production of new machines, but all in one way or another connected with the old or the established principles of procedure. This went on for a long time, no active signs being very visible that any one doubted the accuracy of these principles; or were anxious to inquire whether, after all, we were going in the right way or not. In process of time much real progress had made itself a thing understood; but certain limits began to appear—limits doubtless far beyond the boundary line of old practice, till men were prompted to ask why those limits could not be passed, as had been those of the olden times. It was at this stage of progress that men began to agitate the question, so pregnant with meaning, have those implements and those old modes of procedure the power of enabling us to exceed those limits? The result of the inquiry being by many able men in the negative. Then began the period of the transition-time, to which we have already alluded, and which now engrosses the attention of the thinking man, and claims the interest of the practical agriculturist. Now, with the fact before us that some able men have broadly asserted that in many things we are going upon the wrong track—that we shall speedily get to the end of that, if we have not already got so—and that will not be where we want to go—it can, at all events, believing this or not, do us no harm, but will, on the contrary, do us much good, to inquire “whether those things be so or not?” It will not—at least it ought not to—do to say to these obtruders, if obtruders we think them, in the words of Felix to Paul, “Go thy way for this time: when I have a convenient season I will call for thee.” Not

a few amongst us deem this the time steadily to inquire what can and ought to be done to set at rest those questions which are now agitating the agricultural world. And apart altogether from this consideration, our readers will not think it amiss at the close of a season, which has shown, more than any preceding it, to what comparative perfection we have attained under our present system of working, to glance at the principles of the Present, and to endeavour to deduce therefrom considerations which may enable us to have some idea of future agricultural mechanism.—*British Farmers' Magazine.*

#### Composition of Cake Produced by Pressing Distillery Dreg.

About a year since, I described in the *Transactions*, and gave the analysis of the kiln-dried brewers' grains or draff. I had recently analysed a kind of cake produced by pressing refuse matter from a distillery, which is another instance of the desire to render available the refuse of manufacturing processes to which much attention has recently been paid. The substance in question was in the form of a soft spongy cake, and appears to have been made by drawing off the fluid as completely as possible, and then pressing the solid matter. It was still very moist, and contained 70 per cent of water. Its composition was—

Water,	-	-	70.45
Albuminous matters,	-	-	10.80
Fibre, &c.,	-	-	17.42
Ash,	-	-	1.33
			100.00
Nitrogen,	-	-	1.72

The ash contained—

Earthy phosphates,	-	-	0.36
Phosphoric acid, combined with alkalis,	-	-	9.19

The particular value of this substance lies in the fact, that the dreg, in its fluid form, is so bulky, that it cannot profitably be carried to any distance, and hence, in a large distillery, a considerable amount of the refuse produced is practically lost, because it is more than sufficient to supply the farmers in the immediate neighbourhood, and in these cases it is thrown out, often into running streams, which are thus rendered extremely offensive. In its pressed state, however, it could be advantageously carried to a considerable distance. It is important to notice that it is deficient in respiratory elements, which are converted into spirit dur-

ing fermentation, and then distilled off. Hence it is chiefly valuable for the albuminous compounds it contains, and ought to be conjoined with some substance rich in starch or sugar, such as the locust beans, which have just been described.

### A new plan for ploughing flat land, in aid of drainage.

BY EDMUND RUFFIN.

On the borders of the Atlantic tide-water rivers, and for more extended spaces near the mouths of these rivers, there are many and large bodies of low-land and of surfaces nearly level, or but slightly undulating. All such lands, naturally, are more or less wet, and require drainage for their good tillage and production. And whether drained effectively, or ever so imperfectly, such lands, under culture, usually require, and have, a number of open ditches, to collect and carry off the streams, and the excess of rain and surface water. In former publications, I have offered my views at length in regard to the proper modes of draining, and the subsequent tillage, (in very wide beds,) of lands of this class—and therefore these important and main branches of the general subject need not be here discussed. Nor will either be mentioned, except incidentally, and as necessary for explanation of the later and auxiliary improvement by the manner of ploughing, which I design now to set forth, and to recommend.

Whether any field, or farm, of the flat surface in view, is drained properly or improperly, there will be many ditches running in different directions. Where the lands are most level (as in large spaces of interior lands of lower Virginia and North and South Carolina,)

NOTE.—In this report of a particular drainage operation, it has been the design and effort of the writer to make it as concise as could be, so as to exhibit, generally, the causes of wetness, the means used for remedy, and the results produced. If any reader should desire more extended information on the general subject, either in reasoning as to causes, or instruction and directions for the practical labors of draining, and in various circumstances, such particular information may be found in two other of my previous writings, viz: the article "On Draining," in my published "Essays and Notes on Agriculture," (1855) and a report on the "Agricultural Features of Lower Virginia and North Carolina," first and recently published in De Bow's "Southern and Western Review," and since communicated, with additions, to the Virginia State Agricultural Society.

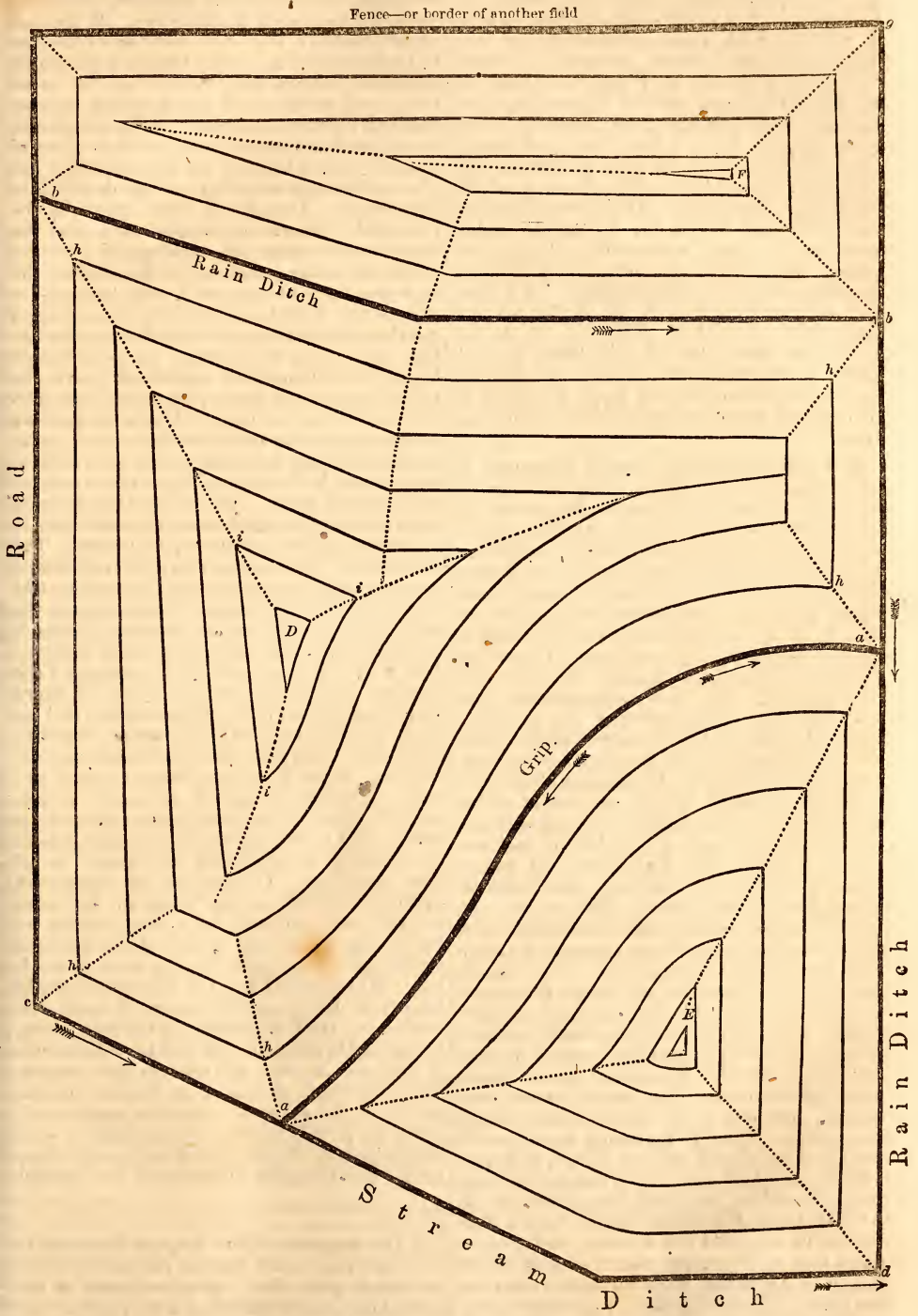
the ditches may be placed almost anywhere, and, in any direction, to operate as designed. But more generally, and especially on the borders of rivers, the surface has so many and frequent, though it may be but slight undulations, that the open drains, for rain or surface water, must be placed precisely in the lowest depressions, and directed in the courses of these depressions. As these latter circumstances are the most usual, and are the most difficult, I will suppose them to exist, when making the following remarks. Then, in a field of this kind, we may suppose there to be many slight and mostly narrow depressions, running in various directions, between the somewhat higher and very much broader intervals of dryer land, but still not dry enough for draining to be dispensed with. Through all these depressions, (even where there are no springs to collect, or permanent stream to vent,) there pass open rain-ditches, which are impassable by ploughs and teams—or smaller grips, which perhaps are ploughed across, and therefore require cleaning out, and almost renewing, after every ploughing of the ground. In either case, these open surface-drains, of whatever sizes, are great sources of trouble, and great impediments to tillage.

Further—as the depressions are usually but very little below the level of the near adjacent ground—and the line of the ditch is not at all lower than its borders—it follows that the earth thrown out in the first digging, must raise the margins—perhaps to be raised still higher by every subsequent cleaning out of the ditch. These banks, even if spread as far as to be thrown by shovels, still raise the margins—and even if but two or three inches higher than the ground farther off from the ditch, this slight elevation seriously impairs the proper draining effect of the ditch. Further—when the ploughs have to stop and turn at the sides of the ditches, they always bring there and leave some earth on the margins—and this serves still more to counteract drainage, and to cause future labor.

Such would be existing evils, even when great and unusual care is used to remove the first-raised banks of ditches, and to prevent subsequent accumulations of earth there. But it is much more common, and far worse, to let the ditch banks remain to raise the margins—and further, to add to them by the subsequent ploughing, (if flush,) being so ordered that every furrow-slice, cut near to the ditch, is turned towards its banks.

Within the last two years, I have introduced a new manner of flush ploughing, which serves from the beginning to moderate the evils in question; and which, in the course of time, will have the best effects, in adding to the draining operation and effects of open ditches, of all kinds and sizes, and also in lessening the future labors for maintaining their proper operation.





The annexed figure, or diagram, will enable me to explain more clearly the manner of ploughing. The whole space represents a field, or part of a field, which is divided by two long depressions into three irregularly shaped "cuts" or divisions, D, E and F. Along the middle of the larger interior depression, there had been kept open a narrow rain ditch, of the usual shape, *b, b*, say 2 feet deep, and 3 wide, (and which depth was necessary,) at which the plough and teams had to turn, because of the impassable obstruction. The other and smaller depression had a grip (*a, a*), say 15 inches wide and 10 deep, across which the ploughs passed, and which was filled, and required cleaning out after every ploughing. A permanent stream ditch, *c, d*, is one of the boundaries, bordered on both sides by the lowest ground of the field. A rain-ditch, *g, b, d*, makes another boundary, a farm road another, and on the fourth side is a fence along side of the adjacent farm—or another field of the same farm.

It is desired to plough each of these cuts in such manner as to throw every furrow-slice from the outsides, and towards the centre. It is supposed that the ditch *b, b*, and the grip *a, a*, are in the best locations—that is, combining as much as possible the requisites of having the shortest courses that can be obtained in the lowest ground. If any defect of location exists, it should be corrected, and the ditch or grip be made correct in position. This being done, the next thing is to mark off the ground for ploughing. The field is supposed to have been left, after the last previous tillage, either in broad beds, (25 feet or more,) high enough and well-sloped—or in low and narrow beds, previously designed to be ploughed flush, and to be again bedded in the progress of tilling the corn-crop. The farmer, or a careful and intelligent man, and a boy, having each one end of a strong, but light cord, (of strong hemp twine,) about 75 feet long, will direct the ploughman where to mark. Taking one cut, (as D,) the man walks along the outside lines, or as close thereto as the near horse of a plough team can easily and safely walk. The boy carries the string stretched, and keeps it at right-angles to the outside line on which the man walks. The ploughman, with a small one-horse plough, or coulter, follows the track of the boy, and barely scratches the ground, so as to make a perceptible mark. If a larger furrow were opened, it would be an inconvenience to the main work. Thus, if beginning on the cut D, the first line laid off, will be *h, h, h, h, h*, parallel to, and the length of the line distant from the surrounding boundary line of the cut D. At each angle, the plough should mark a little beyond its supposed full distance, and then be lifted back to the proper place indicated by the length of the string, when stretched from the next side. The intersection of the furrows will mark the exact place for the angle. Thus each

successive marking will be made, parallel to and equidistant, from the preceding, until the work reaches nearly to the centre. If the last circuit made, (*i, i, i*), does not permit the line to be again used at its full length, it should be shortened, to any less length, (say 30 or 40 feet,) and another and the smallest interior space (D) marked around.\* Next, the plough should mark a line from each of the angles of the inner space through the corresponding angles to the outer boundary, as the dotted lines are placed. The cut is now ready to be ploughed. The plough is first run around the small interior space (D) turning the slices towards the centre. And as the furrows in the beginning are very short, it will be best (to save much trouble in the frequent turning,) not then to use a team of more than two horses. But as soon as the furrows are of sufficient length, this temporary expedient should be laid aside, and the larger plough and team suitable for the land be used. After a few furrows are cut around the inside marked circuit, so as to well designate the outline, then the small interior space D should be ploughed outward; or any way will serve. The plough then resumes its previous place and course, and continues to go around, and to turn the slices inward. The ploughman, in running every furrow, should let the plough cut straight and fully up to, and turn at the dotted lines. This will keep the work right at the angles, in which places it would otherwise be sure to get out of order.—But with this care, and with cutting all the furrows as straight and as equal as every ploughman should do, the ploughing will go on as correctly as in any other mode—and with less loss of labor, and with more thorough execution. More thorough, because there will be no unbroken strips left, and only covered, as in all ridge or bed-ploughing—and no unnecessary and barren water-furrows made, where of no use, as in the closing of "lands" in all flush-ploughing. Further—as the ploughman approaches within a few yards of the next marked line, and still more when nearer, he has in that a test and gauge of his previous work, and a sure guide for the next succeeding. Wherever his last cut furrows obviously vary from being parallel to, or of equal distance from, the surrounding and nearest mark, he has but to make the width of his subsequently cut-slices to suit and remedy the defects. The differences of texture or condition of the soil, or of the cover of vegetable matter, will cause the plough to gain more in width in some places than in others, if no care is used to prevent. But with the guidance of the parallel

\* The engraver of the diagram has made it very incorrect in not having the marked lines parallel to each other throughout each of the several cuts—as is described above, and as the drawing also required.—E. R.

lines marking the widths, and the cross-lines indicating the proper points for the angles of the furrows, it will be easy for the ploughman, (or for any number of ploughs following each other on the same cut,) to make even and equal work, and to close at the outside lines, with but little loss of labor in broken furrows. It is obvious that the outside boundaries, whether made by ditches, fences, or growing crops on adjacent fields, can be ploughed more nearly to, in this mode, than in any other whatever.

The ploughs, and the depth of ploughing, may be of any description suitable to the soil. But, for the convenience of reference to effects, I will suppose the operation and conditions to be like my own. In that, the ploughs for breaking up, whether in winter, to prepare rough or grass land for corn, or in summer, to prepare clover (or weed) land for wheat, are drawn by four mules, and usually in easy ground, cut and turn slices 7 to 8 inches deep, and 12 to 14 inches wide.

First, let us consider the operation of the ploughing, in reference to its great and usually sole object, that of thoroughly breaking, loosening, subverting, and giving tilth to the soil, for sufficient depth, and also burying and covering the vegetable matter which stood on the previous surface.

The land is supposed (like mine) to have been left (at the previous tillage,) in straight and well-shaped broad and high beds—say 25 or 27½ feet wide, and about 16 inches of difference of perpendicular height between the centre or crown of the bed, and the bottom of the alley. The new ploughing will necessarily cross the former ploughing, and the beds and alleys, in every variety of direction. In part, the furrows will run in precisely the same direction with the beds and alleys—in part, they will cross at right-angles—and elsewhere, they will cross diagonally, at angles of every different size. Before trial, I feared great difficulties, and especially in ploughing across the beds at right-angles. But, in practice, the difficulties were much less than expected—and, on the whole, less than belong to any other and usual mode of ploughing. When ploughing directly across the beds, it is true that the new furrow is of very unequal depths—perhaps 10 inches at the middle of the bed, and barely 1 to 2 inches when crossing the bottom of the deep and narrow alley. But these very different depths, if something more laborious to the team, are more suitable to the requirements of the soil in the extremes of thickness, made artificially by the former bedding. The deeper ploughing under the crown of the bed is still the more beneficial, because that place had been broken but imperfectly, or not at all, by the previous ploughings, which raised the bed, and lapped the soil, without breaking it below, at the crowns of the beds. In the alleys where the new ploughing barely scraped, the subsoil had generally been previously reached, in

deepening the alleys; and no greater depth of ploughing was needed, inasmuch as the beds are to remain as they were before. When the new ploughing is immediately across the old beds, (or at right-angles,) the beds necessarily there retain precisely their former position, and, immediately after the new ploughing, appear even higher than before. In the alleys there was so little cutting, and so little of other earth thrown in, that there will be but little earth to clean out, to leave these beds in better shape, as well as in better tilth, than after any former ploughing.

The advantages of more easily and thoroughly breaking the ground, and the disadvantages of throwing more of the ploughed soil into the alleys, both increase as the direction is changed to be diagonal—and from diagonal to coinciding with the direction of the alleys. There could be nothing of this disadvantage (worth consideration) of throwing more earth into the alleys, if every furrow was of equal depth, whether in the highest or lowest places—or at the crowns of the beds and in the alleys. In that case, wherever any part of a furrow was opened, it would be filled by the next cut furrow-slice, of precisely equal size. But in practice, the furrow-slices, are not of precisely equal thickness whether cut at the crown, or the side of the bed, and in the alley, (—and they ought not to be equal—) and therefore the new flush ploughing does operate slightly, to change for the worse, the previous relative positions of the beds. But this change, and damage, is less than is usually made by the careless ploughing of beds, in the same direction, and whether with the design of raising and preserving the same beds, or cleaving and reversing them.—After the flush ploughing described, and in every direction, the former alleys are plainly to be distinguished. And, at a proper time and condition of the land, the running of a two-horse plough up and down in each alley, will sweep out cleanly all the loosed earth that would absorb rain-water, and obstruct its discharge, and leave each bed and alley in the best designed shape and condition for surface drainage. But this opening of the alleys cannot be well done immediately after the ploughing of each cut, nor until rain shall have fallen, and dried off, so that the loose and turfy earth has been somewhat consolidated. In the interval between the ploughing and the subsequent opening of the former alleys, the only evil and danger of the plan may occur, in the fall of so much rain that it will be long before the then water-glutted alleys will be fit for the plough; and when, consequently, great damage will be caused by this long water-soaking of the earth in the alleys. Every care should be used to prevent this evil.

This manner of ploughing should be used certainly for every winter ploughing, (to prepare for corn,) and it may be for any other time when the farmer is sure of being able to complete

any one cut, before being stopped in any part of it by hardness of the soil caused by drought. On this account, it may be too hazardous to resort to this kind of ploughing, in summer, when "fallowing," or ploughing grass land to prepare for wheat. Except for this danger of being stopped by drought, summer would be the best time for the operation, as there would be then no danger of damage to the land from the occurrence of saturating and injurious rains, while the alleys were still partially choked by loose earth.

So much in regard to the effects of this mode of ploughing or tilling, and as effecting the preservation of the former bedding. Next I will describe the much more important effects and the main object, in aid of surface-drainage.—While the ploughing will be as cheap, and more effectual, as ploughing merely, it will at the same time, and with no more expense, greatly aid the other and proper labors for the most effectual surface drainage.

In general terms, the effect of every such ploughing is to remove the entire surface soil, to the depth ploughed, from the out-side towards the centre, as much as the width of the furrow-slices. The amount of earth thus removed is enormous. It is dug and removed by the cheapest possible implement and process—and even this labor costs nothing for draining, in as much as it is required for and compensated as necessary tillage. As each furrow-slice removed is replaced by another, there will be but very little (and unappreciable) effect in altering the general level of each cut. But the effect will be considerable, at the outside furrow, even at the first operation—and still more and more at every subsequent ploughing, so long as it may be expedient to continue the same manner of ploughing, for furthering the same object.

If the furrows were cut equal, with perfect accuracy, the results might be exhibited to the eye and understanding with geometrical exactness and force. And this can still be done, with due allowances for the imperfection of practical operations compared to theory. But to some extent, practice in this case may even surpass the theory stated. For, while the latter supposes equal dimensions of furrow-slices throughout each cut, in practice, it will be quite easy to cut the few outside slices of greater than the general depth, and so the more to lower the outside margin. There is another thing which will be here mentioned, which should be understood hereafter in every named operation. When a boundary line of a cut is a ditch (of the usual steep and irregular sides,) the team cannot safely walk so close to the edge as to plough and turn away all the margin earth. There must be from 3 feet to 1 foot left everywhere uncut (according to the depth or irregularity of the side of the ditch) which earth will require to be dug and pulled back by hand-hoes, which thus perform what

the plough cannot do at first. This hoe-work being always understood, and always required in aid of any manner of ploughing, (and much less in this than any other,) need not again be referred to. And the cutting to the edge of the ditch will be supposed to be effected by the plough, though always (for the earlier work) requiring to be finished by hand-hoes.

Then the effect of the first ploughing on this plan, by a four-horse plough, will be to remove the whole surface-soil, for 8 inches deep, a furrow's width, (say 14 inches) in the directions from the outside to the centre. And the outside furrow-slice, or earth of the dimensions stated, will be removed entirely and permanently from its former position—and its equivalent quantity distributed over the interior or central space of the cut. This operation will lower the margin of the boundary ditches or grips, 8 inches deep, and for a width of 14 inches.—When the like ploughing has been done on the adjoining cut, (E) and to the other side of the grip *a, a*, the furrow-slice would thus be removed from both sides of the old grip, and nearly as deep. A furrow then run along its course, and back in the same track, would deepen the grip, partly fill and slope the borders, and thus, while the grip would be made deeper and better for drainage, it could be less an impediment to tillage, and less liable to be entirely filled with earth by being ploughed across. When the like ploughing is subsequently repeated, another furrow-slice is removed from the outsides of the cuts, and so much a more gentle slope is given to the grip. Then, and thereafter, the plough will be sufficient to clean the loose earth out of the grips. If more depth is desired, it can be given in closing the ordinary ploughing. And even if made of double the former depth, so wide and so gentle will be the slope of the margins, that the grip will present no serious obstacle to the crossing of ploughs, in any direction, of carts, or even of the passage, at work, of reaping machines.

The same operation of lowering and sloping off the margins of the deeper rain-ditches would be proceeding in the like manner, and would only require longer time to approach or perhaps reach, the same good results. Even the deepest stream ditches would be much improved, in their surface-drainage operation; and their obstruction to tillage and to other team labors be greatly diminished.

### Bricklaying.

This subject, though hardly an agricultural one, is, nevertheless, interesting to farmers as a branch of the general subject of building.

As introductory to the subject, we shall first offer a few observations on the *preparation of mortar*.

The lime to be used in the preparation of mortar should be fresh from the kiln, and it

should not be slaked until it is about to be mixed with the sand. The sand should consist of angular particles of various sizes, perfectly free from admixture with clay, mud, or earth matter. This is spoken of technically as clean sharp sand; sea sand is not good, because it is difficult, even by washing, to free its particles from saline matter, and they are also generally rounded by attrition, which renders them less fit to serve as a nucleus for the lime. The effect of the saline matter remaining in the mortar is to render the wall perpetually damp by the absorption of moisture from the atmosphere.

The proportions of lime and sand can only be judged of by direct experiment. The lime should be in such a quantity as to fill up properly the interstices between the particles of the sand, and to prevent them from being in absolute contact with each other. A good approximate rule may be found by filling any vessel with sand, and then adding water until the voids between the particles of the sand are filled and its service covered; the bulk of water will then serve as a pretty fair guide to the quantity of lime required. In practice, a fair proportion is two parts sand to one of lime, with as much added as will make the mass of a pasty consistence. Some qualities of sand require much more lime than this, even so much as four and six parts of sand to one of lime. The common practice of builders, however, is to err on this side, adding almost invariably too much sand, to the deterioration of the mortar.

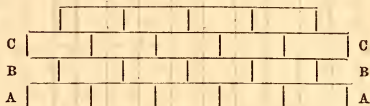
In mixing the sand and lime, the endeavor should be to obtain as homogeneous a mass as possible; and if the lime, from any defect in its quality, or from improper calcination, is not converted into an insipid powder by slaking, but, on the addition of the water, breaks into small lumps, it will not make a good mortar unless it is ground previously to the sand and water being added; for the lumps of unslaked lime, existing in the mortar, after having been some time in the wall, will be gradually slaked, and, expanding in the process, will force the joints and dislocate the materials of which the wall is composed. When the mortar is made, it should be kept in a pit or close place, and protected from the action of the air. Mortar thus kept is found to improve by age, and when required for use it is taken out in such quantities as may be wanted, and beaten up with as much water as will make it work as freely.

**Bricklaying.**—The average size of bricks in this country is nearly nine inches long, four and a half inches wide, and two and a half inches thick; the proportion of length and width, the former being twice the latter, has much to do with the method of disposing the brick in the wall. The determinate size of the bricks, too, serves as a convenient measure to denote the size of a wall, which, in general,

is described as being so many bricks in thickness; thus, a nine inch wall is a wall of a single brick in thickness, or one brick thick; a fourteen-inch wall is a brick and a half, and so on.

In bricklaying the main points to be observed are the *bond* and the *plumb* of the wall. *Bond* in brickwork, signifies that disposition of the bricks by which the joints of one course are covered by the bricks of the course above it, so as to make the whole aggregate of bricks to act together and be mutually dependent on each other. Fig. 57 shews this in its simplest

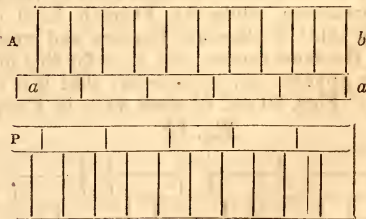
Fig. 57.



form, where A represents the longitudinal sides of one course of bricks, B the course immediately above, and C a third course, with its joints recurring over those of A, while the joints of B, occur in the intervals, and thus they give their conjoined support to any superincumbent weight. This is termed *breaking the joint*, and the recurrence of the vertical joints in the same straight line in each alternate course is called *keeping the perpend*s. By the simple arrangement shewn in the figure, vertical and longitudinal bond is produced, and the result is a well bonded wall of four and a half inches, or half a brick thick. If the bricks were placed with their length across the wall, a nine inch wall would then be formed, but the longitudinal bond would be shortened one-half; and if a wall of greater thickness were required, it could only be obtained on such a system of building, by repeating an independent brick or half-brick wall alongside of the other, without lateral connection.

Bricks laid lengthwise in the direction of the walls, as in Fig. 57, are termed *stretchers*, and it is only by a proper combination of *headers* and *stretchers* that complete bond can be obtained. Fig 58 shews the arrangement.

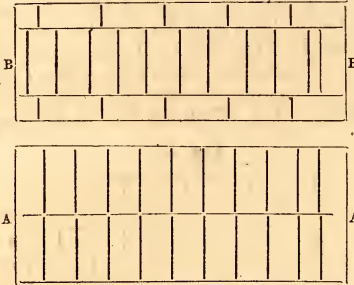
Fig. 58.



of bricks in a brick and a half, or fourteen inch wall, A, shews a course consisting of a row of stretchers *a, a*, and a row of headers *b, b*. B, shews the course immediately above, in which the disposition of these is reversed, the header being now on the side occupied by the

stretcher below, and *vice versa*; thus the central joint is covered half a brick over in every course by the header from the opposite sides alternately, and lateral or transverse bond is well secured. In like manner, in the eighteen inch, or two brick walls, in Fig. 59, the under

Fig. 59.



course, A, is composed of two series of headers abutting against each other, and the next course, B, of one row of stretchers on the outside, another on the inside, and a row of headers filling up the centre. By the extension of the same principle, walls of any thickness are formed.

On considering the proportion of the width of a brick to its length, it is obviously impossible, on commencing from the vertical end of a wall, to obtain bond with whole sized bricks, because the alternate joints of the headers will coincide with the joints of the stretchers. To avoid this, it is necessary to insert a *bat*, made by halving a brick longitudinally, next to the outermost header of each course, as shewn in Fig. 58 and 59. These bats are called *half-headers* or *closers*, and their insertion in the manner described prevents the concurrence of the joints, and preserves the bond.

The system of bonding just described is termed English bond, and should ever be preferred where compactness and strength are wished. Some, however, prefer another disposition of the bricks, which is termed Flemish bond, and which was introduced into this country in the reign of William and Mary. The English bond, it has been seen, shows outwardly on both sides alternate rows of headers and stretchers, while the Flemish bond outwardly exhibits alternate headers and stretchers in the same course, and it is for this more slightly appearance, as some say that it is preferred. Figs. 60 and 61 shew walls in Flemish

Fig. 60.

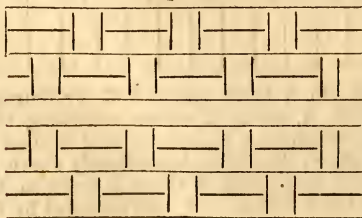
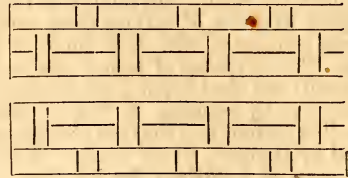


Fig. 61.



bond of the same size as those illustrating English bond. The headers and stretchers will be readily distinguished; and it will be seen, that besides the necessity for the cut brick *closer*, as in English bond in the heading courses, and this frequent occurrence of broken bricks weakens the tie or bond; hence, English bond should be preferred where strength is required.

There are other methods of bonding brick work, such as *diagonal bonding* and *herring-bone bonding*, which need not more than be adverted to, as they do not possess such advantages over English bond for the work required in agricultural buildings, as entitle them to a preference.

There exists in bricklaying great necessity for a strict supervision of the workmen, to see that they preserve the bond, a thing of which they are in general regardless, although the goodness of their work is so greatly dependent upon it.

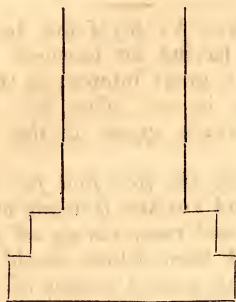
The next important point is the *plumb* of the wall, and the preserving the joints of the courses perfectly horizontal in every direction. In practice, after the footings or lowest spreading courses are laid, the bricklayer, to avoid the necessity of constantly using the level and rule, builds up pillars of three or four courses at the external angles, which he carefully plumbs and levels. From pillar to pillar he then stretches a line to form a gauge for the work between them, taking care of course, by props, to prevent the line from drooping or sagging between the points of support when the stretch is great. On bringing up the intervening courses to the level, he proves them by the application of the rule and level.

In laying bricks, the workman, having spread a sufficient quantity of mortar to bed the brick, strikes off with his trowel as much of it as projects beyond the face of his work, and spreads this over the end or side of the brick last laid. He then places the next brick, and presses it down in its bed until it ranges with the work, facilitating the settling of it, if required, by a tap, either with the edge or handle of his trowel. A small quantity of the mortar is, by this operation, pressed out from the bed and joint, and this he either strikes off, and dresses the joints clean with the point of his trowel, or, if the work is to be plastered, he leaves it rough, to form a better attachment for the plaster.

In order to form a free base for the wall, the

lowest courses are made much wider than the superincumbent wall, and this width is diminished in each successive course, by equal steps at each side, until it is reduced to the proper thickness of the wall. These steps are termed the footings: they should not be more than a quarter brick wide. The width of the footings

Fig. 62.



is, of course, dependent on the nature of the foundation, and the height and consequent pressure of the superstructure. The practical rule for walls of moderate dimensions, under ordinary circumstances, is to make the lowest course twice the width of the wall, as in Fig. 62.

When a wall is more than a brick thick, two men should be employed at the same place, one on the inside, and one on the outside; and they should be equally good workmen, although the general practice is to place an inferior workman or apprentice on the inside.

To make the attachment between the bricks and mortar as perfect as possible, the bricks should be well wetted before they are laid, so that their pores may be freed from dry dust or any dry matter which may prevent the adhesion of the mortar; it is also of great advantage, for the same reason, to damp the upper surface of the course of bricks last laid, before spreading the mortar upon it. If these precepts are attended to, and the brick, in place of its being merely laid on its bed, is pressed into the mortar with a rubbing motion, the lime will be forced into its pores, and perfect adhesion will be the result.

Mortar, although employed to produce adhesion between the bricks by its cementing power is, when used, a soft yielding material, and if employed in too great quantity, will be pressed out of the joints by the superincumbent weight, and the walls will not only settle, but are apt to bulge and fall out of the plumb. The mortar, too, from being pressed out of the joints unequally, causes another evil; if it be pressed out of the joint at one side, the joint there will close and open at the other side, the mortar then retiring within the line of the wall, will form a channel or groove, which trickles down the wall, first retains, then absorbs it, and the first frost bursts and crum-

bles the mortar, and the joint thus requires constant repointing. For the same reasons then, the mortar in the joints should never be in greater quantity than merely to prevent the absolute contact of the bricks; and, as a general rule, no joint should much exceed one quarter of an inch in thickness; or, as it is more commonly expressed, four courses of brick-work should not measure more than eleven and a half inches in height; but as bricks are generally a trifle under two and a half inches thick, it is safer to limit the height to eleven inches.

While it is necessary to guard against the common error of workmen, the putting of too much mortar in the beds or horizontal joints of brick-work, it is of still greater importance to caution against another more common error, the leaving the vertical joints without mortar. It has been stated, that the workman, in laying the bed, strikes off the mortar which projects over, and spreads it on the end or side of the brick last laid, and that is generally all which the vertical joints receive. Hence has arisen a practice of running in the joints of each course with lime, in a fluid state, or *grout*, as it is termed. This, however, can only be an imperfect remedy for bad building, being in itself objectionable, on account of its hydrostatic pressure being apt to burst the walls, and its excess of moisture retarding the drying and binding of the work. The true method is to make the workman fill the vertical joints with mortar, and this, which is generally termed *flushing*, can be done with an amount of labour which the greater stability given to the work will doubly compensate for.

From what has been said regarding the settling and other injury accruing to walls from the yielding of the joints, it must be apparent that a facing of stone to a brick wall must injure its strength, as, besides the impossibility of perfecting the bond, the former, containing fewer joints than the latter, must yield less to pressure, and cause fracture. A facing of bricks rubbed smooth, for appearance sake, is likewise objectionable, as the rubbing slightly diminishes their size.

It is a common practice among bricklayers to carry portions of a wall to a considerable height before beginning to the adjoining parts, the result of which is, that the part first carried up settles and comes to its bearing before the adjoining part is connected with it, and irregular subsidence and cracks ensue. This practice should not be allowed, but the walls should be carried up as nearly level as possible throughout.

Arches in brick-work are formed either with the bricks cut to a wedge form, when they are called *rough arches*, or with the bricks uncut, in which case the rectangular form of the bricks is supplemented by a wedge-shaped joint of mortar, when they are called *plain arches*, or the bricks are not only cut, but gauged to

a mould until the parts fit perfectly, when they are called gauged arches or rubbed arches.

Rough cut bricks are used for flat or scheme arches, in such parts of good building as are unseen, as in fronts covered with stucco, or in plain work, as in back buildings. Plain arches are used when the arch is semicircular or semielliptic. From the inherent defect in the form of a rectangular brick, it is a good practice in plain arches of no great span, in walls above half a brick thick, to make the arches of two or more thin independent rings; for example, a nine inch arch of two concentric half-brick arches, a fourteen inch arch of three half-bricks, and so on; this diminishes the quantity of soft mortar which is required to fill the joints. Hence the rule, the greater the number of bricks the better the arch. Care must be taken, however, to introduce headers whenever the coincidence of the outer and inner ring admits of it. Gauged arches are used in fronts where a neat appearance is desired.

While the walls of a building are erecting, the services of the carpenter are called into requisition, in providing the necessary timber, such as lintels, templates and wood bricks, which require to be built into them. Lintels are used over square-headed openings, and serve to attach the joiners' work to, but they should have an arch turned over them to relieve them of the pressure, when the height of the wall above requires and will admit of it. Such arches are called discharging arches. When discharging arches are used with lintels, the latter had better not have too great a hold of the wall at each end, as causing the arch to be made unnecessarily large. Where there is no arch, the lintel should have a good wall hold, and its ends should rest on templates or wood bricks built into the wall transversely.

Though it is a good practical rule, that nothing subject to decay, or liable to injury by fire, should enter into the composition of a wall, yet it is necessary in practice to depart from it in the case of such timber as requires to be inserted in the walls for distributing the weight of any object, such as the end of a beam over a large surface of brick-work, and also the various pieces necessary to obtain connection between the walls and the finishings which are afterwards to be applied.

*Wall plates* are used to receive the ends of joists and of rafters, to equalize the pressure over the walls on which they rest. *Templates* are strong pieces of timber, three or four feet long, and are used to receive the ends of beams, and distribute the pressure over the same length of wall. *Wood bricks* are pieces of timber of the size and shape of bricks, built in as bricks in such places of the wall as it is necessary to fix wood work to. *Bond timber* consists of timber built into the walls in continuous rows, for the same purposes as the wood bricks.

The ends of all beams should have dischar-

ging arches turned over them, embracing the whole length of the template. These may be half a brick thick, and any wood built into the heart of a wall should be completely embedded in mortar and flushed up with it.—*Cyclopedia of Agriculture.*

### Good Plan of Shoeing Horses.

H. Hallen, V. S. of the Inniskelling Dragoons, having for upwards of thirty years taken great interest in the subject of shoeing horses, offers the following remarks, which appear in the Veterinarian:

*To prepare the fore foot for a shoe*, a level ground surface is made by a drawing knife and rasp, taking off the usual quantity of horn which would be worn away at the ground surface of the crust. At the toe there is a concavity made for the reception of the foot surface of the shoe at this part, caused by the turning up of the toe of the shoe. The heels are not what are generally termed *opened* by the drawing knife, neither is there a particle of the outside of the crust, sole, or frog removed.

*The form of the shoe.*—This is made flat on the foot surface, and concave on the ground surface throughout, excepting at the toe, which part is turned up so as to have the form (inferiorly) of a shoe worn some time. No clip at the toe or any part of the shoe. The nail holes are countersunk: five are used, three on the outside and two on the inside, placed so as to retain the shoe securely on the foot, and, at the same time, to interfere as little as possible with the elasticity of the horn.

*Fitting the shoe to the foot.*—Care is requisite to have an equal bearing throughout on the ground surface of the crust, and the shoe not to project in the slightest degree (outwards) in any part; the heels of the shoe to terminate evenly with the foot.—*Ohio Cultivator*

*Western Hog Trade.*—The Cincinnati Gazette of the 14th says:

The number of hogs packed at Vincennes is estimated at 20,000, being an increase, as compared with last year, of 2,000. The Indianapolis Journal of this morning reports the number packed at that place larger than the whole number cut last season.





## THE SOUTHERN PLANTER.

RICHMOND, VIRGINIA.

## Surface Manuring.

"Who layeth on dung ere he layeth on plow  
Such husbandry useth as thrift doth allow:  
One month ere ye spread it, so still let it stand,  
Ere ever to plow it ye take it in hand."

[Tusser's February Husbandrie.

Professor Voelcker, of the Agricultural College of Cirencester, in England, has recently advised the application of manure to the soil, as a top dressing, in all cases where it is practicable. He proves, very satisfactorily to our minds, that the manure loses but little ammonia by this mode of treatment—less than by the ordinary plan of piling up and heaping it, and much less than the value of the labour employed to handle it as much as it is often recommended it should be.

The reasonings by which Professor Voelcker supports his position are scientific, and we shall publish them in full when we can get sight of the Journal of Transactions of the Royal Agricultural Society, in which his Essay is contained. Meanwhile we have only to say that there is nothing new in the practice advised, and everything to commend it in the experience of those who have tried it. It is only the plan of what is called surface manuring, and is at least as old as the earliest "Book of Husbandrie," Tusser.

Several years ago, one of the most observant farmers we ever knew, as well as one of the most judicious, pointed out to us the error of ploughing up cowpens as soon as the pen was moved. He had observed that the land was better for a number of years where the surface was left undisturbed. We have often noticed the fact since in that gentleman's practice, in our own, and in other cases. In his case especially, we remember that his cow pens, trod perfectly bare, always covered themselves with the richest sod of Kentucky blue grass—

which, by the way, is the June grass, *Poa Angustifolia*, and *not* the *Poa Compressa*, Mr. Cassius M. Clay to the contrary notwithstanding—in two or three years without any seeding. Here was a successful application of Prof. Voelcker's theory, which we will show to any gentleman who will go with us to Albemarle in Winter or Summer. As the land was perfectly bare, and manured only with dung and urine, there was no mulch in this case.

Having heard from the graziers of Loudoun and Fauquier, and other sections, that their lands were enriched by feeding straw in the fields to their cattle, we determined to try it, and selecting the poorest and naturally the thinnest piece of land at Shadwell, a pretty bare hill-side with some healed up gullies in it, we fed cattle there one Winter with straw and corn-stalks. That land improved faster than any other piece of land we ever manured, its condition being considered.

The farmers of the South Branch of Potomac, who send the brag beef of Virginia to market, feed them in two pens with the corn upon the stalk unshucked. They feed them in one pen to-day and the other to-morrow; their hogs alternating in the same way, *after* their cattle, to consume the undigested corn in their dung. Their lands are probably equal to any in the State.

The farmers of Southwestern Virginia do the same thing.

The largest wheat and tobacco grower in Halifax county, we learn, does not even manure his tobacco lots in the usual way, but he puts the straw and stalks on the land and runs the cattle over them. And his nett profits for the amount of surface tilled, are the largest we know.

Several years ago Mr. Edmund Ruffin, in an elaborate Essay in the Southern Planter, recommended the application of all manure as a top dressing to clover. He attributed much of the fertility of his land to that circumstance, and he had been practising it for a number of years, and does so still.

So do the best farmers on lower James River, such as Mr. R. M. Taylor, Mr. Ro. Douthat, Mr. Selden, and Mr. Carter. And their lands, though hard grazed, are improving every year.

We have by no means exhausted the panel of practical farmers known to us, whom we could

name: but we proceed to give authority from the books. The best practical writer we know on Agriculture is Von Thaer. In his "Principles of Agriculture," p. 211, Skinner's edition, he says: "There are visible advantages attending the spreading upon the land of fresh strawy manure, and to leave it till the plowings of Spring commence. \* \* \* \*

"This method of covering the soil during winter renders it much more friable and remarkably fertile. I have often seen the washed, but not rotten, straw thus left on the ground, removed to form fresh litter; and nevertheless, the soil from which this straw has been collected appeared as perfectly manured as if all the straw had been decomposed. \* \* \* \* I have so often seen the good effect of long or short dung thus spread over beans and peas, and left there during their growth, upon hot, light land, that I have no doubt of its advantages on these two crops, particularly if they have been late sowed. But what is still more remarkable and difficult to explain, is that the following crops on land treated in this manner are also superior to those on which a larger amount of decomposed manure has been plowed in."

He then goes on to give instances of his observation and experience, and adds: "The strong smell occasioned by spreading manure leads to the opinion that the evaporation from it must be very considerable; but when we consider that a few grains of musk will for years continue to perfume the atmosphere surrounding it, without sensibly diminishing its weight, it is permitted us to doubt whether the juices evaporated from the manure are very considerable; and if I may believe my own experience it does not diminish its weight." \* \* (On this point Prof. Voelcker proves Von Thaer's conjecture to be perfectly right.)

"It appears, therefore, that there is no solid ground for objection to leaving the manure uncovered on the ground for some time."

Again he says, p. 224: "The soil is usually plowed before the sheep are folded on it; and as soon as the folding has taken place they hasten to bury the manure thus deposited on the ground, by a superficial plowing. Although this proceeding is universally adopted, I have had my doubts as to the eligibility of it, since I have learned of several experiments being

made by agricultural friends of mine, who assert that they have seen the most beneficial effects resulting from folding—cowpening—when the manure was suffered to remain on the surface of the soil for a considerable period."

Here then is a brief statement of the practice of the best farmers and of the best farmed districts of Virginia, and of the best farmer-author who probably ever lived in continental Europe, adopted in some cases before Prof. Voelcker was born, and in others by people who never heard of him until recently. His explanation of the fact is a masterly one; and we thank him for a scientific proof of the correctness of a long established practice, and for affording the best example we know of the concurrence of science and practice in Agriculture.

We wish we had more chemists like Prof. Voelcker. Too many people have ignorantly upbraided chemistry with following in the wake of practice instead of directing it; and too many chemists have accepted the issue. But if science is built on induction, how can it be otherwise than behind the facts? Its business is to deal with facts. If it anticipates them it is no longer science, but vain speculation. We have had a touch of that in Liebig's mineral theory, which we believe is now upheld only by that slowly progressing primary Prof. Mapes.

#### A BILL

*Donating public lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts.*

We have received several copies of the above Bill, and two of them have been accompanied with the following, in the handwriting of some one: "Will Virginia ever have a comprehensive and noble College of Agriculture without a grant of the Public Domain? Why not, in your January No., urge a plan, if the one named below is wrong, in the passage of which all can cooperate."

We observe that several of our exchanges who have, we presume, been similarly favoured, have bitten at this bait, and some of them have swallowed hook and all. We differ with these gentlemen, and being solicited, beg leave to say so. We do not touch the Constitutional question one way or the other; but we would ob-

serve that we hope no such Bill will pass. We believe the donation of Public Lands is a system of rascality from beginning to end, whether constitutional or not; that the parties who obtain the grants are never as much benefited by them as the speculators who get the land; that nine Congressional lobby members out of every ten, are unmitigated scoundrels; and that the Public Lands are, and have been, and always will be, the source of more corruption than any other single item in the Federal Government. We therefore hope that the Agriculture of Virginia will never endow a College by means of any such swindling operation as the scheme proposed.

We should be glad to see a good Agricultural Department attached to the University of Virginia, the only place where one can be wisely established in the State; and we believe it will be if the State will vote enough money to the University to enable it to do other things of more importance at the present time. But it is useless to talk of it so long as money is withheld from other objects, and the University kept in debt to obtain them from its own resources.

#### Lime Applied in Minimum Quantities.

We have delayed writing a leader until the Planter is nearly ready to go to press, in the hope of getting some letters we had requested from gentlemen who have followed our advice in regard to the application of lime to wheat in quantities of one and two bushels per acre. But we have been disappointed, and must forego the article for the present, if not indefinitely. We will be glad if gentlemen, who can do so conveniently, will try the plan this Spring, and report to us the result after harvest. It can cost but little labour or money, and it may be productive of important results.

#### Ornithological Sketches.

We commence in this number the publication of a series of sketches on some of our most familiar birds. The reader will observe that the author enters on his subject *côn amore*, and wins us to himself not less than to his birds by his narrative. If any of his accounts should appear highly coloured we have to say: 1st. That from an intimate knowledge of many years, we would willingly endorse, in advance,

any statement, on any subject, that he would make as of his own knowledge—"we dare be sworn he's honest." 2nd. That those who have not observed the habits of animals, can know but little of the wonderful intelligence and resources with which Almighty goodness has endowed His creatures.

#### South Down Sheep.

We have annually, for a year or two past, advertized part bred South Down Buck Lambs for sale. We have them still; and if they are wanted, can furnish them at the next weaning season at \$15 for the half breed, and \$20 for the three quarter breed, the remaining cross being of Cotswold and Bake-well.

We have uniformly advised breeders who might fancy this breed, to get the pure bred Bucks, at from \$40 to \$60, either from R. H. Dulaney, Esq., of Upperville, Fauquier Co., who has the best, or from Raleigh Colston, Esq., of Ivy Depot, Albemarle, who has the next best, both of whom are gentlemen every way reliable, and are of our own people. But we have also said that half of a loaf was a good deal better than no bread in this matter, and if persons did not choose to purchase the pure bred, they had better get ours than breed from common rams.

It is said of this breed in the standard English work on THE SHEEP: "The South Down is adapted to almost any situation in the Midland part of England; it has a patience of occasional short keep, and an endurance of hard stocking equal to any other sheep; an early maturity, scarcely inferior to that of the Leicester's, (Bakewell's,) and the flesh finely grained, and of peculiarly good flavour;" "and the wool of the most useful quality."—THE SHEEP, pp. 111, 233.

They also make particularly fine lambs for an early market.

#### Clover Seed.

Many farmers, indeed the most who sow clover, seed it in the month of February, some as early as the latter part of January. They are wrong. Hardy as clover is, when it gets into the third and fourth leaf, it is one of the most sensitive of plants until it ceases to depend for life on the cotyledon, or seed leaf.

Until it has passed that stage it is easily destroyed by dry weather, or by a freeze. The first warm spell after it is sowed causes it to germinate; and as that spell is almost certain to be followed by a freeze, the clover is either heaved out of the ground, or killed by the cold.

The first to the tenth of March is the proper time to sow it. If those who differ with us will try the plan on a small scale, we shall be glad to hear the result.

The following, clipped from an exchange, seems to favour the drilling of seed:

#### DRILLING CLOVER SEED.

According to the report of a practice upon a farm near Chelmsford, in England, the drilling of clover seed has been found not only a great saving of seed, but also has rendered the crop more certain, and of better quality. The writer says clover and all other seed have been drilled upon this farm with the most successful results as regards the plants; indeed we feel that no other mode is more certain, and feel assured that two-thirds the quantity of seed will secure a greater crop by drilling than one-third more would effect if sown by hand, ten pounds of clover being ample per acre when drilled properly. Few will pretend that a field of ten acres can be well seeded with less than two bushels or one hundred and twenty pounds. Should the drill save one third of this, and at the same time produce a crop one-third better, and with more certainty, the drilling of clover seed should certainly be considered a matter worthy the attention of farmers.

#### Corn Crop.

The corn crop of the United States must be short. All our exchanges speak of the vast injury done by the cold weather in November last, when the corn had not fully matured. In very large districts of Kentucky and the West, we learn from the same sources that there will not be a single ear fit for seed. Much of it is rotted, and all of it soft.

We observe that it is rising in the market?

#### Sugar from the Sorghum.

We observe that a Mr. Lovering, a sugar refiner from Philadelphia, has received a medal from the United States Agricultural Society, for extracting sugar from the Sorghum. The United States Agricultural Society is a humbug. We do not know whether Mr. Lovering is or not. But we have no faith in his extract-

ing sugar from Sorghum. We have none, because Dr. J. Lawrence Smith, of Louisville, sometime Professor of Chemistry at the University of Virginia, says that only one tenth of the boiled juice is chrysalizable sugar. We do know Dr. Smith to be one of the best chemists in the United States, and a master experimentalist.

For the Southern Planter.

#### Orchard Grass, &c.

HOLKHAM, Albemarle, Jan. 21st, 1858.

Dear Sir:—Yours of January 16th, asking information for a subscriber on the subject of orchard grass, &c., was received a day or so since, and I avail myself of the earliest leisure to reply.

I have been growing orchard grass ever since I commenced farming, and consider it among the most valuable of all the artificial grasses. For fattening stock, it is not so nutritive as Timothy or the *Poa Pratensis*, or Spear grass, generally called green sward—but putting up so very early in the Spring, and affording good pasturage on soils too poor for any of the grasses known here, are great advantages, especially to the most of Virginia farmers who have not yet rid themselves of the legacy of galls and lean spots bequeathed them with no sparing hand.

If intended for a meadow, it should be mixed with other grasses maturing about the same time—if for a pasture, the addition of a variety of grasses, coming at different periods of the season, thus affording Spring, Summer, and Autumn grazing, will greatly enhance the value of the pasture. In some of the best pastures in England there are no less than twenty-six different kinds of grasses, on an acre of which are fattened a large bullock and from three to five sheep. The following grasses, in the proportions given, will make a good meadow—enough for one acre—

Dactylis Glomerata—Orchard grass,	4	pecks.
Lolium Perenne—Perennial Rye grass,	2	“
Red Clover,	1	“

A few years since I was on several farms near Philadelphia, in the month of June, when the farmers were busily engaged in saving hay. This combination of grasses generally prevailed, with white clover and spear grass, which put up spontaneously. The hay made of the above was represented as exceedingly nutritive. The yield was immense, not a spot of soil could be found unoccupied. The addition of the fertile seeded tall fescue, a grass highly approved in England, would probably be a considerable improvement. I shall procure some to experiment with; and I will take this occasion to suggest that our Agricultural Society could, at this time, do nothing more advantageous to

the farming community than offering a handsome premium, to stimulate experiments with the various grasses, to test fully their adaptation to our climate, their nutritive qualities, &c.

Orchard grass may be sown alone, or with grain, in the Fall or Spring—if in the Fall, not later than 15th of October; after this time it is liable to be thrown out of the ground and destroyed. I have had a good stand when sown the last of October, but frequently failed. It should be put in the ground with the wheat, rye or oats, unless these should be ploughed in, when it should be sown directly after, on the fresh ground, before a rain, and put in with a harrow. If sowed on wheat in the Spring, I prefer the month of March, and running a peg roller over it sufficient to put the larger portion of it in the ground, or by driving cattle and sheep over it regularly, as I have done with my clover-seed also, when I could not use my horses or oxen for rolling.

If the grain should be put in with a drill, it should be sowed before the drill. In Clarke and Frederick counties, where it is extensively grown, I am informed they sow it in February and March, early enough to be covered by the action of the frosts. If one could not put it in the ground, I would certainly recommend the adoption of the above plan.

To sow it with regularity it should be thoroughly moistened with water several hours before the time for sowing, then plaster or ashes, (the first the best,) added sufficient for a small portion to adhere to the seed.

For a permanent pasture lot, which your friend wishes to make, the addition of a peck of timothy seed, to the grasses recommended for a meadow, will, I am confident, ensure him fine grazing if his lot is as rich as it should be. As timothy rarely stands well when sown in the Spring, sowing in the Fall will be preferable; if a failure in one or all of the grasses occurs, another trial might be made in the Spring without breaking the land again.

While the orchard grass, rye grass, and clover seeds should be slightly covered, timothy succeeds best when sown on the top of the fresh ground—if we attempt to put it in, a great many seeds will be buried too deep. A great recommendation in favor of orchard grass, is its capacity of resisting the attacks of the chinch-bug. Several Springs my timothy sown with it was almost entirely destroyed, and it was but little hurt. For sheep pasture, I know of no grass superior to it. I have now about one hundred cotswold sheep on a field of one hundred and fifty acres, a portion of which is tolerably well set in orchard grass. They are now good mutton. This field has had upon it not only these sheep, since early in the Spring up to this time, but at the same time upwards of one hundred head of hogs and some cattle and horses, till late in the Fall. Though grazed down, it springs up rapidly and affords a good bite for sheep, if not covered with snow, or the

weather not intensely cold. For sowing generally on the farm, a half bushel of seed, with other grasses, may answer. As the purchase of seed entails a heavy expense, the farmers should sow a few acres of strong land alone, very thick, two bushels to the acre, and save their own seed; which should be saved as wheat is, and not be permitted to stand till entirely ripe, but cut when the heads are generally white, the straw green. This will prevent shattering, to a great extent. It can be threshed out with a threshing machine, or on the floor of a barn, on rainy days, with the flail, or by striking the bundles against a rail. An objection, also, to purchasing seed in the market, is the fact that it is often cut too green—for hay—hence the seeds have not sufficiently matured to germinate.

I have written the above in very great haste, for the morning's mail—have scarcely time to look it over—hope' at least it will meet the wants of a subscriber.

Truly and faithfully your friend,

JOHN R. WOODS.

### Harrowing Wheat.

In July last we addressed a letter to the editor of the Tennessee Farmer, on the subject of harrowing wheat, which, that paper stated, had been practised successfully by Col. Thos. B. Johnson of Davidson County, Tennessee. He very kindly obtained the desired information from Col. Johnson and published it in August last. As February is the time for that operation, we have deferred publishing Col. Johnson's letter till now.

Will some enterprising gentleman please perform this operation on a part of his wheat in February or March, just as the wheat begins to take its Spring growth, and state the result at the proper time to the public through our columns.

Suppose our friends of the Fauquier and Albemarle Clubs order such an experiment to be made by some of their members.

As our own land is somewhat "mortary" about that season, we cannot promise to try it. But a plenty of others may; and they may take our word that no more useful experiment can be made.

L. P. WILLIAMS, Esq.,

Dear Sir:—In compliance with your request, that I should answer a note now before me, addressed to you by F. G. Ruffin, Esq., Editor of the Southern Planter, inquiring for the weight and dimensions of the harrow used in cultivating my wheat crop, of which you made some mention in your report of the notice of my farming operations, taken by the

Davidson County Agricultural Society, at their meeting at my place in May last.

I respond with pleasure to the inquiry, especially as the harrowing was an experiment, which proved successful—increasing the product over similar lands twenty per cent. The harrow weighs 136 pounds, the frame of which consists of three pieces of timber, 3 by 4 inches square, formed somewhat in the shape of the letter A. The side pieces are 5 feet 8 inches long, and the sweep or width between the rear teeth, 5 feet 6 inches. There are 17 iron teeth, 8 on each side and 1 in front, 1 inch square and 12 inches long. The front of the handles rest on the frame, and the rear is raised by uprights tenoned in the cross-piece of the frame, similar in height and shape to plow handles. The driver, by having his hands on the handles, can easily guide it or raise either corner to drop any substance that may clog or drag and cause the tearing out of the wheat. This is the most simple harrow in use, and yet in my judgment the best, for all purposes for which a harrow is used upon a farm.

I must remark, that no one experiment is reliable for all locations and seasons, and would recommend your correspondent to try it cautiously, and don't be alarmed if 20 per cent. of his wheat is absolutely torn out by the roots in the operation, but follow it with the roller, and the branching out will exceed the amount torn out.

I am very respectfully yours, &c.,  
THOS. B. JOHNSON.

*Tennessee Farmer.*

*From the Papers of the Piedmont Fauquier Agricultural Club.*

### Mr. Nathan Loughborough's Result from Graining and Grazing Cattle.

We call the attention of every grazier in the State to the following statement in regard to a lot of cattle grazed by Mr. Loughborough of Fauquier. We deem the paper of great value. The thanks of all graziers are due to Mr. Loughborough for the experiment, and to the Club of which he is a member for giving them to the public. The Secretary asks if any grazing county in the State can beat it in the way of profit. We cannot say, but the Planter is open to any gentleman who can. There are some large grazing counties besides Fauquier, and they talk occasionally as if they made money on fat stock. Linvill's Creek boasts right good grass, and our friend Matthews says Wythe "handles fine." Matthews, Saunders,

Kents, Cloyds, McGavocks, Crocketts. Do you mean to let Fauquier beat you?

To the Editor of the Southern Planter.

OAK HILL, Dec. 16th, 1857.

DEAR SIR:

As Secretary of the "Piedmont Fauquier Agricultural Club," I have been directed to lay before you, for publication, the subjoined report of a lot of cattle grazed by Mr. Nathan Loughborough, who resides in the upper end of this county, and to desire you to request the "American Farmer" also to give it a place in its columns.

Mr. Loughborough bought, October 1856, forty head of cattle averaging in weight 1073 pounds for \$34 88 per head. The said cattle were wintered upon straw and fodder, and a couple of barrels of inferior corn each. They were turned out upon a sod-field April 22d, 1857, grass having sprung very little. At this date they were again weighed, and were found to have lost an average of fifteen pounds to the steer.

Sixteen of the smaller cattle were sent to market in the month of June, and notwithstanding they struck a heavy market, netted at home \$60 per head, a profit of twenty-five dollars and twelve cents each. Had Mr. L. accepted an offer made him at home, for said lot of 16 cattle, he would have realized considerably more. In the month of July, ten more were sent off, which netted at home \$68 37½, being a profit of thirty-three dollars and forty-nine and a half cents (33 49½) per head.

Mr. Loughborough has on hand, at this time, fourteen (14) beeves, for which he has a standing offer of 80 (eighty dollars) per head. It is to this portion of his lot we wish to direct the particular attention of farmers and graziers.

Weight of Stock Cattle Oct 1856. Weight Sept. 1st. 1857. Nov. 1st.

	Pounds.	Pounds.	gain.
No. 1.	*1240	1575	1656 416
No. 2.	1210	1620	1762 552
No. 3.	1170	1533	1687 517
No. 4.	1150	1524	1637 487
No. 5.	1130	1515	1604 474
No. 6.	1110	1510	1632 522
No. 7.	unknown	1508	1630
No. 8.	1120	1505	1625 505
No. 9.	1100	1500	1594 494
No. 10.	unknown	1449	1581
No. 11.	1140	1431	1490 350
No. 12.	unknown	1422	1550
No. 13.	"	1413	1531
No. 14.	"	1400	1516

\* No 1. when purchased was four years old, and his condition was among the best in the lot, fully equal to the average of the grass beef of this country. The rest of the cattle were three years old with the exception of No 11. This steer

Now the average increase of the other cattle, [throwing out No. 11, which has always been an unthrifty animal] has been "496 pounds" to the steer. The whole lot of cattle (40) lost 15 pounds each during the winter, and if these 13 lost in proportion to the whole number, when they have increased 511 pounds each on *grass alone*, which, to many, may seem *marvellous*.

The aforesaid lot of 40 cattle were grazed *exclusively* on 100 acres of *sod*; 27 acres of which is 21 years old; 50 acres 9 years old, and 23 acres 13 years old. Had Mr. Loughborough, on the 1st of November ultimo, taken the price offered him, viz: \$80 per head, he would have realized a profit of \$34 21 per caput. Deducting \$4 each for the corn fed in winter, and estimating the long-foed at \$3 21 per steer, offsetting the *labour* of *feeding* by the *manure* of the cattle, we have a nett profit of \$27 per head, which being divided by 2½ acres (the quantity of land grazed by each steer) would give \$10 80 per acre, or 16½ per cent at \$65 per acre.

It is fair to observe, that, though the lot of 13 aforesaid gained an average of 511 pounds upon *grass alone* from April 22d to November 1st, yet the corn fed to them in the *winter*, doubtless left them (though minus 15 pounds below October weights) in a *fine* condition as to general health, &c., to take on flesh from *grass*.

We would be glad to know if any *grazing county* in *Virginia* can beat this.

THOS. MARSHALL, Sec'y P. F. C.

*For the Planter.*

### Franklin and Gypsum.

There are some falsehoods of such extraordinary vitality, that nothing can put an end to them. The more unfounded and absurd they are, the more obstinately they live and thrive, despite of every obvious ground of contradiction and disproof. The usual subjects of such unconquerable fictions are some flattering incidents, or striking expressions, ascribed to military or political dignitaries, or other

was at least *five* years old, his *condition* was *below* the average of the lot, and although at least one hundred pounds *heavier* than the three last enumerated cattle when *bought*, is now the *lightest* bullock in the lot, and the difference will be *greater* the *longer* they are kept. The cattle numbered 7, 10, 12, 13, and 14 were not weighed separately at the time they were purchased, and therefore their respective increase of weight up to this time can *not* be ascertained *precisely*, but as the increase of *these* from the 1st. of *September* to the 1st of *November* is *more* than *equal* to the increase of the *others*, it is fair to presume that they have gained at *least* *equally* with them during the *whole* time.

popular idols. In such cases, no one questions the new claim to merit or notoriety thus falsely asserted; and it passes down to posterity with more certainty than the well-attested but less marvellous or incredible merits of the same persons.

One of the cases of this kind, and the most remarkable for its absurdity, is the assertion that Franklin advocated the application of gypsum as manure in this country, and exerted important influence in bringing it into early notice and extensive use. This story, with slight variations, I have seen in two different French works on agriculture, and in several American publications—the latest of which is Dr. D. J. Browne's "American Muck Book." In this, and also in one of the foreign books, the asserted statement is made more conspicuous by a pictorial illustration. I will translate the passage from the "*Maison Rustique*:"

"When Franklin wished to make known and to spread the use of gypsum in America, he wrote upon a field of clover, at the gates of Washington, with the powder of gypsum, this sentence: '*This has been plastered.*' The effect of the plaster made these words spring up in relief, in vigorous and deep green plants. Everybody was convinced, and gypsum was popularized in America."

It would be difficult to compress more of false statement in one short passage than is presented here. Yet this has been copied by American writers,—all of whom ought to know the absurdity of the statement; and, probably, it will descend to the latest posterity, sustained by the deserved renown of the man, and the great importance of the action and subject. Wonderfully great as were Franklin's attainments—highly useful and greatly diversified as were his investigations, and his labours for the instruction and benefit of mankind—we have no evidence of his having any knowledge of, or concern in agriculture; and in the absence of all such evidence, it is extremely improbable that he,—always a town resident,—should have undertaken to make an agricultural experiment for the view and instruction of the agricultural public. It may well be doubted whether the then recently observed effects and value of gypsum had attracted Franklin's notice, or much of general attention during Franklin's residence in America. And it is certain that the city of Washington, "at the gates" of which the asserted incident is always "located," did not then exist—and Franklin probably never trod on its then naked and undistinguished site. No "field of clover" had then ever grown, or could have grown there; and if it had, the action and benefits of gypsum, on that soil, in its then poor condition, could not have been strikingly perceptible on the growth.

E. R.

For the Planter.

**A Manure-spreader Wanted—Subsoil Ploughing in Clarke.**

WHITE POST P. O., Clarke Co., Va. }  
January 16th, 1858. }

MR. F. G. RUFFIN:

Dear Sir.—Since I have become a regular user of slaked lime, in compost with plaster, salt, and ashes, or by itself, or simply mixed with plaster, I feel the want of a machine that will enable me to spread it quickly, at the rate of five, ten, or fifteen bushels per acre. If any of the readers of the Planter can recommend a machine from actual experience, I shall be glad to hear from them through the Planter as to price, and where manufactured. I also wish to know if the same information can be had in relation to a Hay Bailing machine. I wish to put some of the Valley hay into market by way of competing with Northern hay. I am sorry to say that the charges on the Manassa Gap Railroad, especially for hay, are so enormous as to almost forbid at present prices the farmers marketing anything.

As you are aware that I am a confirmed believer in sub-soil ploughing all land for corn, I will tell you that, this is the fourth season I have persevered with it. The first season I determined I would sub-soil twenty-five acres of my usual crop of corn, which is one hundred acres; the second season I sub-soiled upwards of forty acres; the next and past season eighty-six for corn, and four for sugar cane and Wyandotte corn. And I have now undertaken one hundred acres more for corn. I commenced in November with one three-horse surface and one two-horse sub-soil plough, and more than half of the one hundred acres is now well ploughed and sub-soiled to an average depth of not less than fifteen inches, and I think it likely a large proportion will average eighteen or nineteen inches in depth.

I have been much gratified to find our soil in Clarke averages much deeper than I had supposed. In the flats between the small hills, which are from twenty to fifty yards in width, when the sub-soil plough runs eighteen inches below the surface, it generally does not bring up any clay. No farmer can have an idea of the compactness of the soil immediately below the average depth it has been ploughed for the past fifty years, until he commences the use of the sub-soil plough. The effect of all surface ploughs upon the soil at the bottom of the furrow—for two or three or more inches, is to render it sleek and compact; the effect is very similar to that of the plasterer's trowel and good mortar pressed upon a brick wall, or, as is often the case, upon the earthen floors of basement rooms. I have often observed that the furrow, after the sub-soil plough had passed along, had the appearance of being filled with pieces of unburnt brick. Any farmer

will admit that corn roots, or any other sort of roots, would make but slow progress in a soil in the condition I have described. Such is the condition of most of the sub-soil I have observed within the past twenty-one years. I have always found great difficulty in getting my surface ploughs much below the average depth of those who had ploughed before me, which close observation has proven to me was not over four inches. Although this has been my experience, I am aware that most farmers deceive themselves into the belief that they plough eight or ten inches deep; and from a slight observation of the ploughing done around them, they console themselves that they plough deeper and better than their neighbours, when the fact is, the average depth of ploughing in Virginia does not exceed four inches. I am satisfied that the imperfect sub-soil ploughs used heretofore in Virginia, and the imperfect work done with them has been the cause of the unsatisfactory results of the few experiments that have been made. Every farmer and gardener, I should suppose, is willing to admit that the garden, the truck-patch, and the young orchards are all greatly benefited by sub-soil ploughing, or trench-digging. If this be the case, I ask why it is that "what is sauce for the goose is not sauce for the gander?" Most persons will contend that the horse-power and number of hands upon a farm must be increased to enable them to double plough their land. In answer to such, I can say, I have not increased the number of either above the number heretofore employed upon the same farm for the past ten or fifteen years. All that is necessary is the will and a little more horse feed, aided by a little more forethought and management.

Yours very respectfully,

ISAAC IRVINE HITE.

For the Planter

**Preserving Wood by Steeps.**

MONTGOMERY, Ala., Dec. 10th, 1857.

FRANK G. RUFFIN:

Dear Sir.—In my late hasty passage through Richmond, I did not find time to call upon our friend Mr. Secretary Williams, in explanation of your enquiry upon the subject of rendering timber indestructible by a cheaper process than Kyanizing.

The new and more economical process is called Burnettizing, from the name of the discoverer,—and is carried on upon a large scale at Lowell in Massachusetts, and by using the chloride of zinc in place of the corrosive sublimate in the Kyanizing process can be done at about one-tenth of the cost.

I have received information from the Rev. Joseph Tracy, of Boston,—a gentleman of accurate information and high standing,—that Messrs. Flint & Kent of that city will under-



take to deliver shingles Burnettized in Richmond at the following prices, viz: (pr. M., four bunches to the thousand)—

1st quality sawed piné, . . .	\$6 75
2d " " " " " " " "	5 75
1st quality spruce pine, . . .	5 50
2d " " " " " " " "	4 50

Mr. Tracy writes me further: "I have the impression that you may buy the fluid chloride of zinc in Baltimore with directions for diluting it with water, and soaking shingles in a barrel with it, or any other vessel large enough to hold them, and save something by the operation.

From an intelligent Bostonian, with whom I have travelled in the cars to-day to this place, I learn they are beginning in Massachusetts to Burnettize the soft woods, such as pine and cypress, for cross-ties on railroads! If this will do, what a grand discovery in the construction of railroads!—an improvement destined soon, literally, to override all other improvements upon the face of the earth.

Yours respectfully,

JOHN H. COCKE.

N. B.—Mr. Tracy says further, "the shingles furnished by Messrs. Flint & Kent will be warranted that a thousand shall cover a square of ten feet, or one hundred superficial feet."

For the Planter.

### To Stock Breeders.

*Policy of Hiring out Male Animals for Breeding Purposes, after the manner of the English.*

The account of the "Babraham ram letting," of the distinguished English breeder, Mr. Jonas Webb, contained in the November number of the "Planter," suggests the enquiry whether something of the same kind could not be imitated in Virginia?

The Annual Exhibitions of the State Agricultural Society would afford a good opportunity for the letting of superior animals; and it would have the effect of attracting to the "Fair Grounds" much fine stock that otherwise would not be taken there. The high price of thorough-bred animals of every kind in our State and country prevents farmers of moderate means from purchasing with a view to the improvement of their flocks and herds, and to such persons importations from foreign countries are out of the question. I doubt if those few persons who, combining the pecuniary ability with the requisite amount of public spirit, have brought into Virginia from other States and England animals of improved breed have been remunerated for their outlay.

I am, however, inclined to think, that if a system of public "letting" of thorough-bred animals at our State Fairs, can be "inaugurated" under wise and liberal regulations, it would not only tend in an eminent degree to

the general and permanent improvement of our stock, but would also promote the interests and enhance the profits of those public spirited citizens who have already introduced into the States cattle and sheep of improved breeds.

My intention, however, is not to write an essay on this subject, but simply to draw the attention of the enlightened breeders of improved stock to the matter, as one well worthy of their consideration.

Dec. 15, 1857.

W. M. T.

For the Southern Planter.

### Raising Hogs.

OXFORD, N. C., Jan. 13th, 1858.

Mr. Editor,—As I have nothing to do and so much time to spare, I thought I would drop you a hint about hogs. The raising of pork is no small item to every good farmer. In the South, without a plenty of this important article, no good *master* can feel contented; and since my return from the South and West, where I heard so much talk about the supply from the West being cut off by that dreadful scourge known as the *hog cholera*, I feel it a duty to my brother farmers to give them my experience in raising hogs for the last twelve years.

The first year that I set out on my own hook I was well cared for by my father, who gave me a plenty of stock of all kinds to commence with. I was, and always have been, partial to hog raising, so I gave my hogs all the care I could. I payed much attention to the breed, and what few I raised I thought of a superior kind, being a cross on the Snapdragon, Berkshire and Irish grazier.

Well, Mr. Editor, with this fine breed of hogs, (as they have since proved to be,) I could scarcely raise pork enough for the first three years of my farming life. My hogs would sicken and die, do what I would, with some disease or other. On one occasion, while examining my hogs in a pine field, I noticed the best and fatest of them were employed in rooting up pine roots and eating them greedily, whilst those in lower plight cared little or nothing for them, and contented themselves with grass. I observed this several times, and came to this conclusion; that it could not be for the sustenance that the fatest and best of my hogs were devouring these roots so greedily; if it was, why did not the poor ones seem as anxious to get the roots? And again, why was it that whenever I lost a hog, or shoat, it was one in fine condition?

I am now fully satisfied that my conclusion was correct, that it was not for the sustenance that they eat the root, but that it is a hog medicine, and they use it, and know it by instinct as the dog resorts to grass for all of his ailments. Being satisfied for what purpose the pine root was u ed by the hog, I determined to try this remedy in a more concentrated form, so I got the spirits of turpentine, knowing

that was a strong anthelmintic and diuretic, commenced giving my hogs a common teaspoonful to every hog that was weaned from the mother. They soon gave strong indications of health; and to show on what my confidence is built, since 1847, I have not lost a hog of any description, or kind, that I know of, from disease of any kind.

It may be that the spirits of turpentine may relieve the hog cholera. It can be used in a simple manner: just take a given quantity of shell-corn, or wheat, put it in a tub and measure a teaspoonful per head to all of your hogs. Be careful to mix the turpentine well in the vessel, and then scatter it over the ground so that each one gets his share. W. L.

### Export of Breadstuffs.

It has become customary of late years to export nearly 30,000,000 bush. of wheat from the United States to foreign countries, even in years when harvests are comparatively good abroad, because in such years the harvests being also good here, the price sinks in propor-

tion, as also freights. The exports of breadstuffs of all kinds in 1857, as compared with 1856, from the United States, were \$51,333,176, against \$59,300,906 in 1856. Of this, wheat and flour were as follows:

	Bbls. Flour.	Bush. Wheat.	Total in bush. Wheat.	Average for Flour per bbl.
1856 . . . . .	3,510,626	8,154,877	25,508,007	\$8.34
1857 . . . . .	3,715,057	14,570,631	33,146,196	6.97½
Increase, . . . .	204,427	4,416,054	7,638,189	

By far the largest portion of this export was sent, of course, to Great Britain. The harvests of Europe have been short 3 or 4 years in succession, during all of which breadstuffs have remained high, a fact which has been ascribed in many quarters to the influx of gold. The high prices have, however, stimulated the settlement of land and the production of large crops, in the expectation of a continuance of the high prices. This reaction, however, has come. The Russian war was followed by redoubled energy on the part of the producers of Southern Russia, and good prices all over Europe stimulated production. Their efforts being blessed with good harvests have been crowned with abundance, and prices are approaching their minimum rates. Flour in New York is selling at \$4.25 per bbl., and freight 2s. to Liverpool, making \$4.75, and it is there dull at \$5. The stock in New York is 868,000 bbls., or about 250,000 more than an erroneous statement published by the Post and some other papers. We may make a table of the average annual price of wheat in England on Michaelmas of each year, according to official returns on which the tithes are regulated; the export of wheat and flour from the United States, expressed in bushels of wheat; and the average annual price of flour in the United States, according to the Treasury tables:

	English average. s. d.	U. S. export, bush.	Price flour in U. S.
1852 . . . . .	39 10	18,600,680	\$4.37
1853 . . . . .	45 7	18,958,990	4.94
1854 . . . . .	72 10	28,148,595	9.25
1855 . . . . .	71 10	7,821,584	9.50
1856 . . . . .	73 1	25,508,007	8.34
1857 . . . . .	59 2	33,146,196	6.97½

In 1852 and 1853 the United States were exporters at low prices, but the war raised the prices, aided by deficient harvests here, which even at the high rate which ruled in England in 1855, cut down the export two-thirds. Since then, railroads, migration, and good harvests have combined to enhance supply, until an export of 33,146,196 bush. out of the crop of 1856 did not sustain prices, which have continued to fall until they are now \$4.25 in New York, notwithstanding that the stagnation of business has kept back large supplies. There has been exported this year, already, since Sept. 1, 5,563,305 bush. against 10,265,730 bush. same time last year. It is probable that the quantity which can be spared from this year's crops will equal 45,000,000 bush. if a market can be found for it. The late revulsion bearing so heavily upon the North and middle of Germany may by breaking down the machinery by which German and Polish grain has found a market, lessen the supply from that quarter. Many large grain dealers have failed recently. —*New York Economist*.

### Malic Acid.

This acid is found in apples and the juices of similar fruits, and is also present in the mountain ash and garden rhubarb, to which it gives the peculiar tartness that is so agreeable to the palate. It is capable of being separated by the processes of the laboratory, but in its pure state no useful application has been found for it, although we think it might advantageously be employed in the manufacture of those summer beverages in which a sweet tartness is so cooling and agreeable. The difficulty attending its preparation may perhaps for some time prevent this, but that it will be more generally used we do not doubt. —*Scien. Amer.*

*A Projèt for the Consideration of the Executive Committee of the State Agricultural Society and the Farmers of Virginia.*

In reply to the following communication of our friend, we have but a word to say. As he says that a fact he cites, to-wit: That one commercial house in Richmond now sells wheat at one cent per bushel, "would relieve him from the necessity of saying any thing further" in favour of his scheme, but for the duty to himself of a concise (!) reply to us, we who do not conceive our duty to ourselves requires us to spread it over so many columns of the Planter, will avail ourselves of the same fact, and say nothing in reply to his argument. For surely, if it was unnecessary to make it, it is unnecessary to answer it. One house follows our friends prescription, and sells wheat at one cent a bushel. But it does not sell all the wheat that comes to Richmond.

As to the *carte* and *tierce* of his communication, we have no time, nor inclination, to cross swords with him; but rather, while we maintain our opinions, strengthened by his assault upon them, to say with the pacific Irish gentleman, who was told to consider himself horse-whipped by his enemy, who tapped him lightly on the shoulder, "Arrah! an' if its considerin' ye come to, consider yerself run clean through the body with a short sword!"

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*For the Southern Planter.*

Some months since this *projèt* was presented to the public and discussed at length by my friend, the editor of the Southern Planter. He takes issue with me upon the grievances complained of and the remedy proposed. If he were not well known to me, I should have inferred, from the character of his criticism, that he was either a miller himself, or a commission merchant. He thinks the farmers have no cause of complaint, that they obtain an abundant price for their grain; and that the commission of two and a half per cent. charged by the merchants, is a moderate compensation for the services rendered. It would not be necessary to urge any argument in opposition to these views were it not that they are connected with the practical scheme proposed, as I sincerely believe that he stands alone among the farmers of the State in these opinions, and that not one other can be found who concurs with him. But I know his independence of thought too well to entertain an idea that the isolation of his position will at all modify his convictions.

It is a source of much regret to me that a long absence from home and other pursuits have prevented my giving an earlier attention to the subject. The arguments of my friend against the practical working of the scheme require an answer, and it would have been much better to give it when those arguments had been recently considered by the readers of the Planter. But as I was then prevented, I will not aggravate the evil by delaying longer.

1. It is alleged there is no concert of action among the millers, because on some occasions there has been a difference in the price offered for wheat at the different mills. It is easy to perceive that this might occur notwithstanding a general concurrence of action. It is not to be presumed when one of the millers is well supplied with white wheat, and only needs red to mix with it, that he would be as liberal in his offers for white as his neighbor, who wants white, but has an abundance of red. In all such cases we should expect, although there is a general uniformity, some little difference in the offerings according with the urgency of the wants of the respective mills. In Mr. Ruffin's own experience with his last crop, it is easy to understand why he was offered by one miller for purple straw and Mediterranean \$1 40 and \$1 45, and obtained from another \$1 50. The first was supplied with that kind of wheat, and would not buy except at a sacrifice on the part of the seller. I do not doubt he would have found at the other mills where that description of wheat was wanted nearly the same price offered. Indeed, it seems he did, for at one he had an offer of \$1 50 and \$1 52. It was never believed by me, and never intimated, that the millers had daily meetings, where they determine on the price they would give for grain during the day. It was only such general concert of action as might be expected from intelligent men, engaged in the same business, next-door neighbors, whose large interests would reasonably impel them to act in uniformity rather than in rivalry. By the one course they make probably hundreds of thousands which would be lost by a different proceeding. Three houses similarly situated, with large capital, monopolizing for the most part the milling business in the city of Richmond, regulating by the great extent of their operations the price of wheat here, with an abundant supply, trading usually in the same markets, dealing only in one article, with every interest involved in a concert of proceedings and every interest equally opposed to a conflict of business; with a capacity on the part of each to do infinite injury to the other by raising the price of wheat by rivalry and an equal power to offer mutual support and add largely to the gains of one another by acting together and keeping prices down to the lowest point that can be reached by their combined action—that these houses so situated should not generally act in concert would

be a commercial miracle. If there was a stinted supply of grain, they might be brought into collision. But such is the overflow in the market that they select only the best specimens on a large amount that makes its way to the North. It is true, the larger portion brought here, is sold here, because farmers know from experience it is useless to bring to this market any other than wheat of the highest quality. There is then every possible motive for concert, and none conceivable for rivalry, for men such as those engaged in these establishments. But if it be still doubted, I would ask, if one of these millers gave a higher price than the rest, is it not obvious he would buy all the wheat until he was fully supplied? Suppose one of these gentlemen, operated on by a spirit of liberality, which does not belong to commerce, should offer the farmers as much as he could afford to give, looking to the price he obtains for the flour made of their wheat in Rio Janeiro, would the other millers do any work whilst their offers continued? Does not every man know who sells wheat here, that he is offered generally about the same price at all the mills when he is not informed that they do not want to buy?—Again, if there be no concert, why is it that they all concur in the same abuses as we consider them? Why do they all require that grain should be taken from the vessels and delivered at the mills at the risque of the owners and weighed in their scales instead of using the legal weighers provided by the State? It is not necessary to recapitulate further under this head. It seems perfectly clear that it is their interest to act in concert, and that they are true to their interest in practice.

2. It was asserted in my previous communication that the price of wheat here is *generally* fifteen to twenty cents below the price in New York, sometimes less and sometimes more.—When the new wheat commenced coming to market there was a difference of thirty cents in favor of New York. Subsequently, for a short time, there was but little difference. It is believed that fifteen or twenty cents is the usual average, being the cost of transportation and sale in New York. No good reason has ever been assigned for this difference within my knowledge; on the contrary, facts seem to show that the Richmond millers can afford to give more than the New Yorkers. He obtains a much higher price for his flour. The best brands of the Gallego and Haxall mills, command from three to four dollars more at the least, as a general rule, than the flour of other sections of country, in the city of New York; and the second quality will bring more than the first of the New York and Baltimore mills. In Rio Janeiro, the principal market for our flour from Richmond, the price varies from two to five dollars in our favor. The last sales in that market, of which I have had an opportunity to see the price current, were in the month of October. Two cargoes of flour from Richmond

were sold at twenty-five millrees per barrel, when at the same time, one from Baltimore and another from Philadelphia brought fifteen millrees. The millree is about fifty cents, but varying to some extent, according to the exchange. Thus our flour was sold at \$12 50 per barrel, and that of the two Northern cities at \$7 50. Very much of this difference is due to the superiority of our wheat; something doubtless to the excellent preparation and unsurpassed processes through which it is carried at the mills. A difference of five dollars per barrel in favor of the Richmond mills, and these mills giving fifteen or twenty cents less for wheat than is given for the same article in the New York market. I would ask if the farmers producing the wheat which makes the flour that brings such prices are not entitled to a better share of the profits than than which they receive? Think you if it were made exclusively by three men, as it is ground for the most part in three mills, it would not bring a better price, although the quantity made were the same? You would see then the advantages of a combination in selling as well as in buying—the wide difference between a sale of two and a half to three million of bushels of wheat by three men and by ten thousand. It would be the difference between the operations of the millionaire on the stock exchange and the man with a few hundred.—The control of large resources, either in buying or selling, always gives great advantage. For myself, I would not wish to deprive the millers of large profits, to which they are well entitled for their great enterprize, the extraordinary skill which they have attained in their art, and the reputation they have obtained for their superior flour, but at the same time I would have the farmer who furnishes the *materiel* receive some share in these high prices derived in so great a degree from their labors.

3. The millers require, as a general rule, that wheat should be in market before they will make a bid for it. I do not blame them, seeing they have the power in their own hands, for it is certainly a rule very much to their advantage. It is admitted in their "d. fence," that this would place the farmer at the mercy of the buyer, but it is urged, "the other would place the miller at the mercy of the farmer." If it were so, I would certainly prefer it to the present system, but I do not perceive that consequence. If the crop of wheat were not equal to the sample, they would not be slow in doing themselves justice by refusing to receive it, they would still have the power in their own hands. When the wheat is once in market, they know full well the farmer will submit to great sacrifices rather than re-ship it. It is proper to say that they do not always adhere to the rule, but sometimes buy by sample. In the country, we all know, this is the universal practice, and is fair to all parties.

4. My ingenious friend, who has undertaken the defence of millers and commission mer-

chants, "goes the whole hog," and stands by them in all things. He even finds a reason to be addressed to farmers for the practice of requiring wheat to be delivered at the mills instead of receiving it at the vessels, as is done every where else. The weighers and measurers appointed by the State, and who, of course, are disinterested between the parties, are rejected, indeed, are ignored, when called in by the sellers, and they make it a *sine qua non* that the wheat should be received at their own mills, though taken from the vessels in their own carts, and out of the custody of the captains, yet still at the risque of the captain, weighed in their own scales, and by their own agents. If this be not a one-sided transaction in all its aspects, I am at a loss to conceive one that is. My friend has estimated the loss, basing his calculation upon the average loss of three-fourths of one per cent. furnished by myself and derived from a most reliable source, and finds that the farmers lose about \$20,000 by the process. He seems to think this loss can be better borne by the farmers than the millers, for that "which to ten thousand farmers would be less than two dollars, would be to six millers upwards of three thousand each." If it be proper that the thefts and the waste in the carts of the millers between the wharves and the mills should be the loss of the farmers, it is not perceptible why the rottage and all the other losses in the granaries of the millers should not also be charged to the farmers. It amounts to an insurance *in transitu*. Why should not the insurance be continued on the granaries also? Ten thousand farmers could better bear the loss of a fire or a theft than half a dozen millers.

But it is urged that it is more convenient to "have one common place of delivery within their own precincts, and subject to their own inspection." Doubtless it is to the millers.—But how is it to the sellers and the captains of the vessels, their agents, who are accustomed to deliver their cargoes on their own decks, under "their own inspection?" The weighers and measurers appointed, by the State, are ready there with "scales" and all other appurtenances to do their duty, being legal umpires between the parties. As to the cost, it is a new bagatelle, approximating a homeopathic quantity. And then the \$20,000 would be saved to which reference has been made. But it is not principally as a question of loss as one of power that I urge this point. This practice, together with all the arrangements in the Richmond market, show that the game is in the hands of the millers and they play it to suit their own interest and their own convenience. The farmers have yielded because they could not help themselves. It is perfectly obvious that they never gave a willing assent to so one-sided and anomalous a proceeding.

5. Since the date of my last communication, I have discovered that there is a most respecta-

ble and responsible house in this city that sells grain for one cent per bushel. I was not aware of it, and I deem it my duty here to do the gentlemen engaged in it justice. It makes against my *projet* for one of the reasons insisted on for the appointment or recommendation of an agent by the Executive Committee, was the extravagant exaction of two and a half per cent. by the commission merchants. This fact would relieve me from the necessity of saying any thing further in reference to them, were it not due to myself and those positions heretofore assumed, that I should make a very concise reply to some of the arguments of my worthy and respected critic. The defence made for them is that they render other services besides selling grain for the two and a half per cent; that they sometimes make advances of money, buy guano and other necessaries for their employers without charge, except the legal interest. If it be true that such is the usage, it is an admission that two and a half per cent. is too much for selling grain. Besides, is it just, under these circumstances, to charge those who need no such services with the same commission? There should be an abatement in proportion to the value of these services, which, upon this hypothesis are due. But I am informed upon the best authority, that when advances of money are made upon cargoes of grain, the commission merchants *always* consider themselves entitled, according to mercantile usage, to a guaranty of two and a half per cent. in addition to the two and a half per cent. commission, and six per cent. interest, unless there is some contract to the contrary. The result is, that a farmer who sends his wheat to one of these houses to be sold and draws on it for any part of the proceeds before they are due, may expect to pay two and a half per cent. commission, two and a half per cent. guaranty, and six per cent. interest—in all, eleven per cent. There are few countrymen who would not consider such advances a little too dear to be indulged in often. As to the other services to which reference is made in the *Southern Planter*, I can say from experience, having had commission merchants in Baltimore who charged only one cent per bushel, and those in Richmond who charged two and a half per cent. that I never perceived any difference. That in the one case I obtained the same services for the one that I did in the other for the two and a half. In both cases they were friendly and obliging, and ever ready to do a kindness.—Both these houses have my best wishes for their prosperity.

6. The remedy proposed for the abuse in the grain market, was the appointment of a commercial agent by the Executive Committee, on whom the landed proprietors might concentrate, and through him obtain that strength which they could never have when acting separately. Combination is strength: division is weakness. We might then oppose concert on our side to con-

cert on the part of the millers. We might then have a voice in fixing the rules and usages of the grain market. We would be heard and felt through our agent. But the Southern Planter discovers great impediments in the way of the successful working of the proposed remedy. He asks, "where would he" (the agent) "get the money to make advances on his sales? For the farmer will have advances." The answer is obvious. From the same source that commission merchants now obtain it. The same facilities would exist for him as for them. He might follow the present usage—take the note the miller gives for the wheat of the farmer to a bank, and have it discounted, and afford him the proceeds of the note given for his own grain, in advance. There is no limit to the capacity of one man to make all the advances which are now made by *all* the commission merchants, if he sold *all* the wheat, which does not now apply to all of them. They obtain money by means of the notes of the millers discounted in the banks. If he sold all the wheat, he would have all the notes, and consequently would be able to obtain as much money as they now get from this source altogether. The credit is really given to the millers, and the grain is the basis of it all. The millers pay the banks by drafts drawn on shipments of flour. The answer is so palpable, that I feel some surprise at the question's being asked. Is it possible that it was written after dinner?

*"Aliquando Homerus dormit."*

This being the simple solution, the whole superstructure of a million's being withdrawn from circulation, fall like the "baseless fabric of a vision."

7. But the Planter perceives other difficulties in one man's giving the supervision necessary to so many clerks and agents as would be required for so large a business. There are fifty men in New York, I presume, that do as large a business, taking the hypothesis of the Planter that all the grain should be sold by one agent; which I never anticipated. The house of Stewart is engaged in a trade, I do not doubt, to double the amount. Yet there is no difficulty in supervising it and making it vastly profitable. I know of one firm who bought of a single establishment in Liverpool, in one year, \$900,000 worth of goods. These houses deal in a great variety of articles, buy and sell and trade in both hemispheres. Their business is complicated, varied and widely extended. Here our agent would not buy at all, and would sell, for the most part, one thing, wheat, some little corn, and perhaps a trifling amount of other products. His business would probably be limited to this city, and his dealings with some half dozen firms. The affairs of such an agency would be, to those of Stewart and many others in New York, as unity to a hundred, or perhaps a thousand, in the oneness, simplicity, facility and concentration on

the one side, and the diversity, complication, difficulty and extension on the other. My friend of the Southern Planter could do the business with ease, edit his valuable paper at the same time, and also find leisure to cultivate his farm, and also make occasional visits to different sections and deliver agricultural addresses.

But it is asked, who would join the agent as security on his bond? Who become endorsers for the commission merchants when they sell our grain? If you were to ask one of those gentlemen for security, when you propose to him to sell your crop of wheat, he would probably look at you with astonishment and demand an explanation. And yet these commission houses are generally engaged in speculation, I believe, and buy and sell and *venture* in a great variety of products and commodities, and as a necessary consequence, are subject to the casualties of trade, and sometimes fail. And yet it would be an extraordinary proposition to one of them to ask for security when you consigned a cargo of grain to be sold. It would be against all mercantile usage. And yet there is much more peril in the present system, and more necessity for a security, than with the agency proposed. The *projet* did not contemplate that the agent would be a merchant at all, and therefore not liable to the dangers that beset the path of commercial men. He need not incur any risk unless he endorses the notes of the miller; and that would be so small a risk, as regards the principal millers, that it is scarcely worthy of consideration. There would probably be more peril in endorsing the bank notes that constitute our currency. He would be exempt from the dangers of trade. It was distinctly stated, in giving a concise sketch of what this agency should be, that the agent "should devote his time and his energies to the sale of grain." I would have no merchant, if it depended on me, because there would be less security, and also there should be a concentration on this business. The compensation would be ample, if the farmers generally seconded the measure, and there would be no necessity nor propriety in his engaging in the engrossing hazards of mercantile life. The argument of insecurity, introduced to prejudice the proposed agency, it will be seen, constitutes an additional and cogent reason for its adoption. It is taken for granted that no man would be appointed by the Executive Committee who was not of the highest integrity and without reproach; and whose pecuniary circumstances were such, in addition, as to justify committing a large interest to his hands. But there would not probably be so great an amount of money in his keeping at any one time as might, on the first view of the question, be anticipated. Farmers do not usually leave much of their income in the coffers of their commission merchants. It is no sooner received than it is paid over.

Large sums would pass through his hands, but would remain there a very short time. He would receive with one hand and pay out with the other. There might be notes of the millers to a large amount in his hands, but not money, for he would not incur the expense of discounting the notes, unless to obtain money for the farmers. It would certainly be a position of trust requiring integrity and capacity, but not more so than that of the commission merchant. All things considered, whatever difference there may be, is in favor of the agent, although there may be a larger amount of value entrusted to his keeping, for he would be free from those temptations to perpetrate a breach of trust and squander the money of others, to which the speculations of commercial life subject those engaged in it.

8. Again, this comparison between the commission merchants and the proposed agency, suggests another argument still in favor of the latter. The commission merchant buys grain as well as sells it. It is obvious there is an inconsistency between these two functions. The purchaser of grain is interested in reducing price; the seller in raising it. Here is a conflict of interests; and it is to be presumed, the farmers suffer by it. Our agent would not undertake any such contradictory duties. His business would be to sell; and as agent of the Executive Committee, to collect information, on the subject of production, in the grain-growing countries of the world, whose crops influence our markets; and also, on the various causes that may effect prices, and make report to the Committee, to be published for the information of the farmer.

9. The Planter seems doubtful if any man could be found competent to perform the duties—and if found, certainly "not in the country." I fear he has little confidence in man, less in the countryman, and small hopes of humanity. If such a man cannot be found, it follows as a consequence, the farmers would better sell their own grain. It seems to me, one need not have a lantern, like Diogenes, in search of an honest man, to discover many such all over the broad lands of Virginia. They may be found in country and in city.

"Now, where does that gentleman live? Not in the country, if he lives at all." So says the Planter. What means this flouting at the country? Whence this cynic sentiment? I do not believe Diogenes himself even used his lantern at the early age in which my friend luxuriates. Such ideas, when they do exist, are found in the sombre and acetic brain of morbid age. The roseate thoughts which spring-time suggests, full of hope, beauty, confidence and love, would be more appropriate to him and his character. "Not in the country!" Is there not more intelligence, more learning, more wisdom, more integrity, in proportion to population, in the country of Virginia, than in the cities? Whence have emanated all those

great men in the historic annals of our State, who have left their impress on the sands of time?—the statesmen, warriors, scholars and divines, who have given character to this Old Dominion, placed her foremost in the constellation of States in moral and political influence, and have illustrated and elevated our common country? Not from the cities; not one, of whom I have any recollection. They all breathed the pure air of the country, and were reared under those healthful and elevating influences which a constant communion with Nature engenders. And yet it is doubted whether a trustworthy agent to sell wheat and corn, competent to perform the duties, can be found in the country of Virginia. I am sure this idea of his must have been put on paper "*currente calamo*," if it be not a mistake of the type-setter, and that sober second thought would obliterate it. In the hurry of composition, editors have not always the time for profound reflection.

10. One word as to my individual consistency; though it is of little moment to any one but myself. The Planter refers to the fact that I made an effort to put down the guano monopoly, and suggests that I am now endeavouring to put up a wheat monopoly. If it were so, I will do the Planter the justice to say, that he has been perfectly consistent; consistently wrong throughout, and in a false position for an organ of the agricultural class. He was opposed to doing anything to put down the guano monopoly, and now he is equally opposed to doing anything to put down the monopoly of the millers. And in both transactions he has been working against his own "kith and kin." But my position, so far from being what it is represented, is perfectly consistent. The opponent of the guano monopoly, and equally the opponent of the monopoly of the millers—exerting myself to destroy the former and equally engaged in an effort to render innocuous the other by concert among the farmers. But if a trio of millers who control the wheat market be not a monopoly, I would ask if a trio of agents to sell the wheat would be? And I have no objection to three if it be preferred, though I think one would be better. There is no difference between three and one when there is concert, as regards the principle. I am a free-trade man, of the strictest sect, but I am not content to have it all on one side.

11. "Farmers somehow imagine that they are 'victims,' and feel themselves abused by those they deal with." Thus says the Planter. Unfortunately there is but little imagination in this idea, and much of strict truth. Not that I would accuse them with whom they have transactions of any intention to "abuse" them, or do them injustice, but the misfortune is, they estimate their own labour too high, and the farmers' too low. Besides, in the conflicts of traffic, the men who live by their wits

have the advantage of those children of toil who live by the cultivation of the earth. But the great cause of the impositions and injustice to which they are subjected, is the want of concert among them. Combination is easy and common among other professions, and in other departments of labour; among farmers it has never taken place for similar purposes. There are Trades Unions, Medical Societies, Unions of Lawyers, Mercantile Associations,—and indeed all other bodies of men have contrived in some way, by some concert, to protect themselves and enhance their profits. The farmers alone have remained heretofore disunited, with no common understanding on any subject, and they have consequently been, more or less, the victims of all. Tradesmen have their “strikes,” meet together, and advance their prices; physicians gather, and determine on the value of their services, and agree on a scale of charges; lawyers unite and propose a minimum standard of fees, below which the humblest limb of the law cannot descend on pain of Coventry: but leaving full liberty to mount upward to any maximum that patrons will endure; the merchants agree on their average of per cents and charges for services rendered; yet the farmers, who are the principal subjects on whom all these unions are to operate, remain without concert, without union, and are often fleeced as sheep by the shearer.

12. It is a fact worthy of consideration in this connection, and it has been noticed by political economists that the masses of men collected in cities are better paid for their labours and find life easier than those of the country. As a general rule, they are better fed, better clothed, more comfortably housed, and enjoy a higher standard of comfort. This is all the consequence of receiving higher wages. One dollar will command more labour of the same quality in the country than two in the cities. And the larger the city, it is believed, as a general truth, the less labour it will command. This will be found to be true on examination in all the departments of labour. The lawyer, the physician, the clergyman, the merchant, the mechanic, all are better paid. They will all explain it by saying it is a necessity, as their expenses are higher. Admitted; but why are these expenses greater than those of men in the same position in the country? For an obvious reason—the standard of comfort is higher. They live higher, enjoy greater luxury; and this mode of living being usual, is deemed a necessity. The country lawyer who has an income of \$1000 a year from his profession, is doing well; the city lawyer of the same grade considers himself as doing a poor business unless he makes three or four thousand. The clergyman lives and is contented on five or six hundred a year; in the city he must have from \$1,500 to \$3,000. The journeyman mechanic is doing well on from \$200 to \$300; in the city he requires \$500 or \$600. A commission mer-

chant who is in a good business, has probably an income of \$15,000 or \$20,000; a man of the same capacity, whose skill and acquirements should entitle him to an equal reward, would have an income from \$2,000 to \$3,000. The same difference, but not in degree, may be traced through all the ramifications of the professions, and in the various species of labour. There is a wider variation in all those classes who live by their wits; less when you reach the day labourer. The slave is almost an exception, for he is either hired from the country or comes in competition with those who are. But even he receives higher wages. It is a curious fact that similar labour, intellectual and physical, should receive such different compensation in the one and in the other. There is no doubt that it is to be attributed in a great degree to concert and combination, &c. Each new influx of labourers, professional and manual, enters the precincts of the city, they advance their claims for compensation, and demand the same as those around them. The dollar declines in value in its relation to labour, and the latter of course rises in the same ratio. Each addition gives new strength to the combination—is an accretion of force. Competition will not bring down the standard of prices to that of the country, because the standard of comfort is higher. Men will live like their neighbours of the same class, and consequently must have the same wages. We have occasionally seen, in times of scarcity, when population was pressing hard on the means of subsistence, violence resorted to by the operatives to prevent a reduction. And a moral force is always exerted to counteract the natural tendency of competition to reduce the price of labour, and approximate it more nearly to that of the country.

I would not wish to excite prejudice against the towns, and I should deprecate it. I have no sympathy with the sentiment of Mr. Jefferson, that “they are sores on the body politic.” But I would have the denizens of the country imitate the cities in concert, if it be possible,—raise their standard of comfort, and struggle for their due share of the wages of labour. They work hard, are more exposed, are subjected to toil that is much more disagreeable, have fewer of the pleasures of society, and receive in return less compensation. I wish prosperity to the cities and to the country, hand in hand, and not one at the expense of the other.

My friend of the Planter seems to have been in an eccentric mood when he did me the honor to review my *projet*. There is a temptation sometimes to sustain paradoxes in the field that is opened for ingenuity, and the startling effect of extraordinary sentiments. I would not suspect him of being lured into this arena by such motives. But others may. I do not doubt he will excuse me for giving utterance to the general sentiment, that he



reached the climax of eccentricity when he propounded his scale of integrity. He may have intended it as an amusement for his readers. He says: "Of the business classes, the lawyers are, by all odds, the most honest; next, the merchant; and then, if you choose, the farmer." Bishop Berkley astounded his age by affirming there was no such thing as matter. Some materialist equally startled mankind by denying there was any such thing as spirit. But these men were in earnest—they had a theory to support. The Planter, I can not help thinking, was laughing, for he loves a good joke. If he were not, I am sure the lawyers and merchants were, when they read it. The reason assigned for their superior honesty is an additional cause for believing it was a jest. But, unfortunately, his readers thought he was serious. He says, substantially they are subject to more temptation; ergo, they are more honest. In that model prayer bequeathed to us by our Saviour, we beg that we may not be led into temptation, that we may be delivered from evil. That, if not the reading, is my interpretation of it. Lawyers and merchants the first men in honesty! The former, men who sell their arguments, who espouse indifferently the right or the wrong side of any question for a fee, whose glory it is to make the wrong appear the better reason and rescue from the penitentiary and the gallows those whose crimes would send them there by the laws of their country and by the interests of society; to defeat law by the sophistry of reasoning and the chicanery of pleading. Men whose habits of sustaining any position that may suit the case in hand, oftentimes so clouds their intellects, introduces such confusion among their moral perceptions that they seem to doubt whether there is any right or any wrong, any truth or any falsehood. Sophists necessarily by profession and practice they often end by becoming Pyromists, and doubting every thing. These are the No. 1. men on the scale of honesty. Next comes No. 2, men, whose lives are devoted to traffic, whose pride it is to make a good bargain, which being translated, means to fleece their neighbors when they get a chance; to give as little as they can for every thing they buy, and get as much as they can for every thing they sell. It must be admitted that this is an occupation eminently fitted to the development of high, moral qualities. The men driven from the temple with a whip of thongs belonged to this class No. 2, who were accused by the Saviour of converting the temple of God into a den of thieves. Plato, as my friend no doubt, recollects, excluded them from citizenship in his republic, but admitted them as subjects, being, as he says, necessary evils. "As for merchants and dealers, accustomed as they are to lying and cheating, they shall be suffered in this city (the city of his model republic) as necessary evils only. The citizen who lowers himself by keeping a

shop shall be persecuted for such crime, and if found guilty, shall be imprisoned: that sort of trade is to be kept only for foreigners." It was the custom, that is, the common law of the Carthagenians *even*, that ancient nation of shopkeepers, to exclude merchants from all places of power, these being filled with the landed proprietors. Cicero also writes, "what honor can come from keeping a shop?" Small trade is a sordid thing: little tradespeople can get nothing without lying." Mercury, the god of trade, was likewise the god of thieves and liars. I have no intention of applying the sentiments of those ancient sages to modern times. They are curious, as showing the estimate in which merchants were held in antiquity. But we have emerged into a day of great light. It is not to be doubted that class No. 2 has much improved since those days, but there is equally as little doubt that the atmosphere of the lawyer's office and the counting house is not the most salutary for the improvement of our moral nature.

The Planter places the poor farmers with some hesitation; he seems doubtful as to the propriety of it, as high on the list as No. 3. I wonder he had not put the politicians before them. We are thankful for that; but we had imagined heretofore that the farmers were the bone and sinew of the body politic; and even more, that they were "the salt of the earth." There seems to be something in the cultivation of the soil, something in the daily dependence upon our Creator to prosper our labors, something in the pure air and the constant contact and communion with nature, that brings out, nurtures, and develops the religious sentiment. Vice is not in harmony with nature,—it is a discord. It belongs not to the smiling landscape—the forest teeming with beauties—the green meadows:—these all speak of heaven, and the mind of man rises from the contemplation of nature to nature's God. The vicious man flees from such scenes, seeks the crowded marts, where reeking crime makes an atmosphere congenial with his own dark nature. The fields covered with the rich mantles which a bounteous nature spontaneously throws over them, redolent of sweetest odours, delighting the eye and filling the mind and the heart with images of beauty and sentiments of benevolence, scenes that reflect the harmonious ideas of Deity himself; these and all such scenes so favorable to our moral nature, that inspires man with a love for moral beauty as well as physical, cannot be grateful to the man of crime; must be distasteful to his depraved and perverted feelings.

There are many other influences which have a tendency to elevate the inhabitant of the country, who lives by the cultivation of the soil. The comparative solitude of his life affords opportunity for reflection and invites to serious contemplation. Thought, grave thought, away from the busy haunts of men is

productive, of itself, of many virtues. He is also exempt from those temptations to vice and crime, to which men are subject in most of the other occupations of life. Why should he be dishonest or false? He has rarely ever a motive. His fields furnish him his subsistence, and he needs no patronage, and, consequently, resorts to no arts to obtain it. The flatteries and trickeries of those who live in a state of dependence and subsist by the support of others, are without inducements to him. He is dependent not on man, but God above for his prosperity. Contemplate his existence in all its relations, and it will be seen, that he lives under more salutary influences, and is less subject to temptations to swerve from the path of moral rectitude than any other class of men.

Let no man accuse a farmer of making an assault on the merchants and lawyers. He is merely defending his own brethren, and has not the least idea of denouncing the gentlemen engaged in these occupations in this age of the world. If he had, he would have quoted the magnificent denunciation of Burke, who pronounces the Ledger, the Bible of the merchant; and the counting-house his chapel. A farmer intends rather to speak of the unfavorable influences of the occupation, than of those engaged in it. A FARMER.

KING & QUEEN, Dec. 20th, 1857.

### How Does Plaster of Paris Act?

December, 7th, 1857.

Mr. Editor:

Having been engaged in another pursuit all my life, until within the last five or six years, I am very naturally inquiring of those who I imagine ought to be able to instruct me in matters pertaining to the farm; but to my surprise I am more puzzled and perplexed than ever. I find no two farmers agreeing in opinion upon the same thing. It occurred to me that you, or some of your numerous correspondents might be able to assist me. What induced me particularly to address you at present, was this, in conversing a few days ago with an intelligent farmer upon the *modus operandi* of Plaster of Paris, and as to the proper time of applying it to crops, (i. e. clover.) He said that it benefited plants only by its power of attracting moisture, and that the best time of applying it was after it had begun to bunch, say some two or three inches high. He supported his opinion by experiments made by sowing it on clover at different ages, as also before it put up at all.

Another has told me that plaster only benefits those plants into which it enters as a component part.

Another that neither of these modes is the true explanation, but that plaster was a great absorber of grasses, and that a great deal of ammonia was contained in the atmosphere, which was brought down to the earth dissolved in the rains and dews, this was absorbed by

the plaster to be gradually given out as the plants required it. Now it seems to me to be an important matter to a farmer which of these explanations he adopts as the true one, as having a practical bearing upon the time when he should sow his plaster. If the first and second explanations are the true modes of action, the time of sowing it can be of no consequence; but if the second is the correct mode of action, it ought to be sown early enough to give time for water and other agencies to dissolve it, for it cannot enter into the plant except in a state of solution.

It seems to me that the first explanation attributes too much efficacy to an inconsiderable cause, besides, in wet seasons, when there is no lack of moisture, the plastered clover is much more luxuriant than that which is not; again, in dry seasons what becomes of its attractive power for moisture, when we have dews and rains sufficient to satisfy its absorbent powers, its action ought, at least, to be perceptible; on the contrary, I have seen it sown in a dry season when it had no appreciable effect.

The third explanation seems to be a very ingenious one, but it does not satisfy my mind, for if it is correct, plaster ought to benefit almost all plants alike, and to be beneficial on almost all soils equally; but it is generally admitted, I believe, that it does not. These objections will apply equally well to the moisture theory.

The second explanation, as far as I can see, satisfies all these objections, and if correct, must determine the time for sowing plaster to be early enough to give time for rain and other agencies to dissolve it.

I have written this to elicit from you, or some of your numerous correspondents, what is known upon the subject: if you approve of this letter publish it.

I remain yours, truly,  
AMHERST.

If any of our readers can satisfy our friend, "Amherst," as to the true theory of the action of plaster, we hope they will do it. We do not profess to be able to decide the question. We have plaster sowed in May to produce a decided effect; and we know some farmers of excellent judgment, who think the fall the best time to make the application. But on land that is improved by it, it never seems to come amiss, and we think the time is not very material. Our own practice has always been to sow in February, because we think it can then be dissolved in time to operate on the plants.

We do not believe it acts by attracting moisture. No material of as difficult solution in water can.—ED. SOUTHERN PLANTER.

## Horticultural Department.

E. G. EGCELING, Contributor.

### "Tyro" Answered.

In the Planter for January, at page 63, is an article by one signing himself "Tyro," to which we ought perhaps to devote some words of reply, though the answer to be given is so obvious, that we can hardly believe that any other Tyro has failed to perceive it; nor have we yet been able to decide whether this "Tyro" was serious or merely "poking fun at us." We have elected, however, to treat the article in question as a serious inquiry for light, and shall proceed to clear away the difficulty which "Tyro" has started in his own mind.

The difficulty is all of Tyro's origination, and the inconsistency and conflict which he fancies to exist between our articles on apples and root-pruning, is only in his fancy. Tyro seems to forget that the articles presented two remedies for fruit trees, standing in very different situations, and were not stated as applicable to all trees or to the same trees. Trees which needed manuring certainly would not require root-pruning, and *vice versa*. Just here lies Tyro's blunder. Root-pruning we carefully limited to such trees as from one cause or another are superabundantly supplied with sap, which expends itself in a prodigious formation of wood and foliage without producing fruit. These are peculiar, exceptional, extreme cases, which require a peculiar, exceptional and extreme remedy, and we did not suppose that any man would be simpleton enough to regard this process as applicable to all his fruit trees indiscriminately. It is to such trees as we have described, and *only to such*, that root-pruning is beneficial.

On the other hand, while the general statement is true, that to have apple trees bear well, and to have them bear every year, you must give them manure and gentle cultivation; it is not every apple tree that needs manuring. The soil may be rich enough without the application of manure and then it would be wasteful folly to apply manure; and an excessive application of manure might prevent the tree from bearing just as effectually as a want of manure would in other cases. Even Tyro is,

doubtless, familiar with the fact, that a soil hardly rich enough for apples is too rich for the peach, which is a light feeder comparatively, yet even the peach tree requires manure; and it is the general opinion of writers on the subject, that the yellows may be entirely prevented by judicious manuring and cultivation of the peach tree. The apple is a gross feeder, exhausts the soil rapidly, bears largely, and on these several accounts requires a very rich soil.

Now, with the fact before him, that root-pruning is prescribed for a tree which is barren from an over supply of nutriment, and manuring for a tree barren from a lack of nourishment, does Tyro observe any conflict in the positions and reasonings of our two articles in a former number of this paper?

Most likely Tyro would answer affirmatively, for if we understand the force of language, the article upon which we are commenting goes to the extent of insisting that it is inconsistent to say, that barrenness is superinduced by an over supply and also by an under supply of nourishment from the soil. It may seem so to Tyro, but it is not inconsistent; and if inconsistent it is the fact, as we will show even to Tyro's satisfaction. On the spots where the slain of Waterloo were buried, for many years wheat grew most luxuriously, and to a height that seems incredible, but it never ripened—that is, bore no fruit—because the soil was too rich. On some of the poor lands of Eastern Virginia, wheat, when sown, never comes to head, that is bears no fruit, because the soil is too poor to furnish the plant with a sufficiency of nutriment. Now, does Tyro perceive any inconsistency in the advice to the owner of the poor land, manure your fields, put your wheat down with guano, and you will reap a crop; and in saying to the owner of Waterloo, put in some other crop which is more exhaustive than wheat, something which feeds more grossly. Is not this the very advice which Tyro would give, and would he not thereby affirm just what we have affirmed, that too much nourishment and too little nourishment, is alike prejudicial to the fruitfulness of the plant we rear. Undoubtedly; and Tyro would be acting precisely upon the principle which governs a doctor, who takes away the life blood from one patient and seeks by every means to deplete the system, while with ano-

ther he seeks to augment the flow of the crimson current in the channels of circulation, and administers tonics to brace and tone the whole system. And all this is sensible and rational, as Tyro must, upon reflection, admit.

But, thinks Tyro, if all this be true, then a man may, by manuring his apple trees, make them as barren as the pear tree which was planted in an extraordinarily deep soil, into which the tap root (not the top root) penetrated. Certainly he may, just as he may so highly manure his wheat fields that no wheat will ripen on them, and the danger is not much greater in the one case than in the other. But will that deter Tyro from spreading manure upon his wheat and corn field, and if it does not, why should it prevent the manuring and cultivation of the orchard. Is Tyro aware that land may be so enriched that it will not even produce weeds, as is often seen to be the fact in spots where hot beds were made. Probably he has long known the fact, and yet he has gone on sowing guano and spreading manure, year after year, without being disturbed by the apprehension that his land might become so rich that it would not produce a crop of wheat, oats, corn, or tobacco. Why apprehend danger then in the application of manure to the orchard, when the same common sense and observation, which enables the farmer to manure judiciously his several staple products, will also guide him rightly in the application of manure to the apple orchard.

Is Tyro satisfied with this explanation? If not we will further laborate and illustrate these ideas by familiar facts and reasonings, which cannot be misunderstood, and which will make our meaning so clear, and establish our positions so thoroughly, that not a shadow of a shade of doubt shall remain.

In conclusion, we remind our readers that root-pruning is commended as a plan by which the flavour and quality of fruit may be modified and sometimes greatly improved, as well as a remedy for barrenness in certain cases. And likewise, would remind them of the fact that their apple trees will bear annually if they are properly manured and cultivated, with the exception of a few varieties of apple which so far have not been known to bear except once in two years. Even such, it is likely, can be brought to produce annually by receiving a proper treatment not yet attempted.

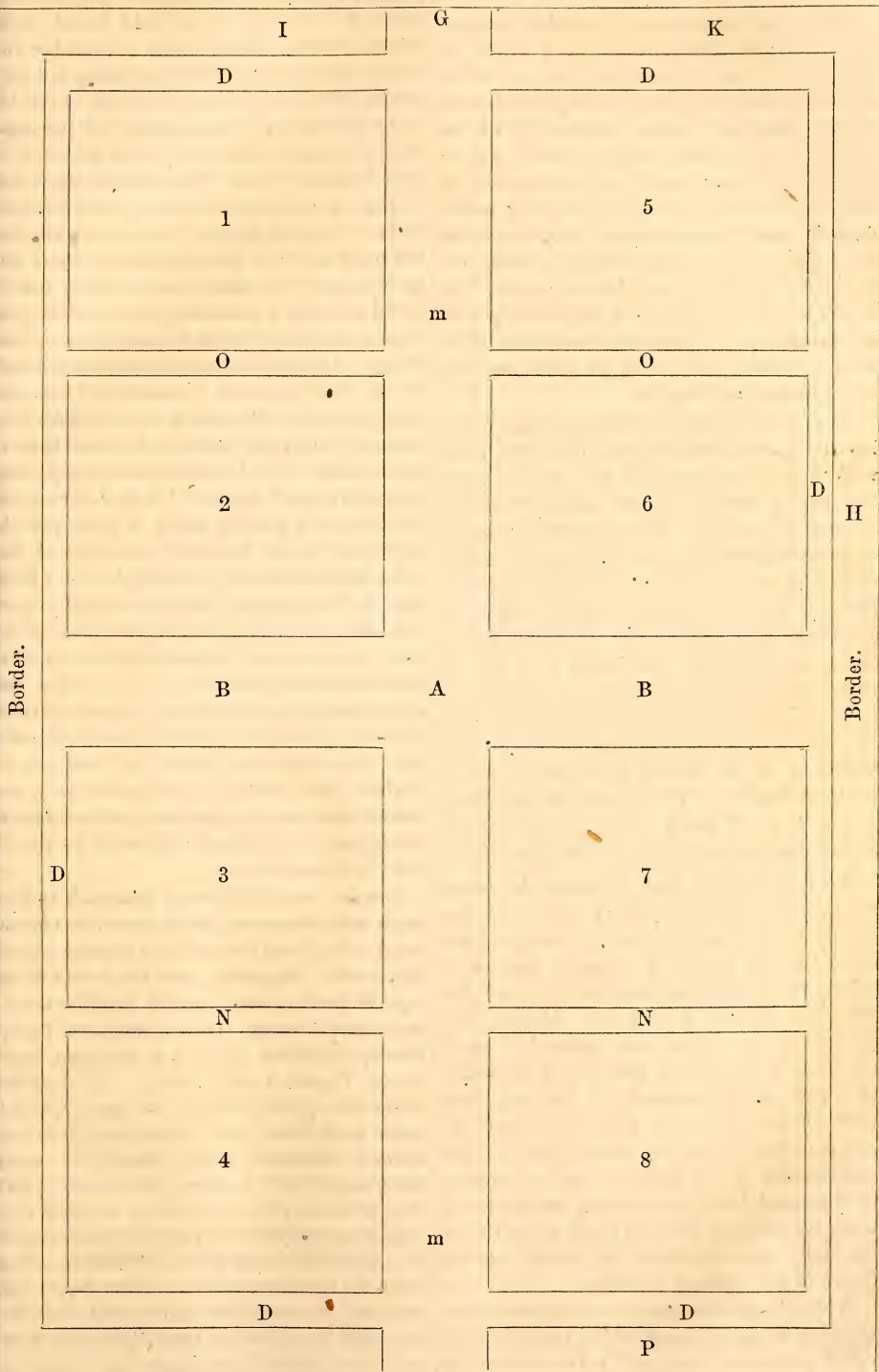
### Seasonable Suggestions.

Remember the hints which we have heretofore given for work to be done in garden and orchard during the winter season. Thus far the season has been so mild and genial that it has presented no hindrance to out-door operations upon the farm, and if our readers have used due diligence they will have everything about their premises in apple-pie order at the opening of the Spring. Speaking of the mildness of the season, we have just seen a notice of a rose which bloomed in the open air during this third week of January; and what is even more remarkable, we quite recently gathered in our grounds a full-blown verbena, which had been wooed forth from its home by the genial sun-rays and bland zephyrs. If this delicious mildness shall continue through the months of February and March, all work on the farm and in the garden will begin at a very early period of the year; and all vegetation will get ahead of the cultivator who is not full-handed, or furnished with large facilities for his work. Prepare for this state of facts by completing a thousand and one little things which require to be done, such as carting out manure, getting tools and implements in good order, repairing gearing, sharpening hoes and blades, repairing rakes, clearing up garden walks and borders, and advancing all the work of the farm and garden as far as prudent considerations will allow. Attention to these trifles, at this time, will help in all your operations hugely at the busier periods of the year. A little repair done now, by enabling you to employ otherwise all the force on your farm will be equal to an augmentation of that force by the employment of one or more hands. Take time by the forelock and be ready for your work.

### Origin of Various Plants.

- Cabbage grows wild in Sicily and Naples.
- The Poppy was brought from the East.
- The Sunflower from Peru.
- Ilops came to perfection as a wild flower in Germany.
- Saffron came from Egypt.
- The Onion is also a native of Egypt.
- Horseradish from South Europe.
- Tobacco is a native of Virginia, Tobago and California. Another species has also been found wild in Asia.

THE KITCHEN GARDEN.



## EXPLANATION AND REMARKS.

The foregoing diagram is intended to represent a kitchen garden, comprising within its limits an acre of ground, which is so divided by walks as to give eight garden squares, each square comprising about one-twelfth of an acre or less. A half acre of ground may be laid off in the same manner of course, only the walks and borders should be something smaller, with smaller squares, and according to the same plan, a larger space might be arranged. Ordinarily, however, a garden so large as this, would be ample to supply a large family with an abundance of vegetables, especially if it were cultivated wholly with the spade and hoe, as it certainly ought to be.

G, on the diagram, represents the gate entering the garden, which opens upon the main walk, marked m, which in our plan is seven feet and a half wide, and passing entirely through the garden. This avenue is intersected at A by another marked B, which is designed to be five feet wide, and intersected again at different points, by smaller walks, marked respectively D, O and N, each of which is two and a half feet wide. The walk D, it will be observed, passes entirely around the whole space included in the garden proper, separating the border from the squares. This border, which is of the utmost consequence, has a width of five feet. The squares are numbered 1, 2, 3, 4, 5, 6, 7 and 8, and it is by these numerals that we shall speak of them hereafter.

The laying off of such a garden is simple enough, if one will only start right. Having chosen the ground and put a suitable fence around it, and graded it properly, begin with the border, next to the fence and lay it off five feet wide, running it by a line. Having thus ascertained the border, next proceed to mark the walk D two and a half feet wide, which also goes entirely around the garden; then mark off the main walk M, then the walk B, and then the two smaller walks O and N. The construction of the walks is an easy matter, all that need to be done, being merely to dig away the earth an inch or two at either side of the walk, so as to throw the water from the centre of the walks to the sides.

While the kitchen garden, which we are describing, is mainly intended for the culture of edible plants and roots, still a few ornamental

plants judiciously disposed, will detract nothing from its usefulness and add largely to its attractiveness. Thus, when practicable, we would edge the walks with box-edging, not only for the sake of its beauty, but even more, because it will preserve the regularity of the edges of the squares and obviate the necessity of their frequent repair. It is also sometimes well to plant a few choice roses or other valuable plants along the line of the main walk, but this must be left to the individual tastes of our readers, only we must caution them not to crowd so many ornamental plants into the garden, as to interfere with its more appropriate offices. As combining both ornament and utility, we would place in the middle of our garden, where the two chief walks intersect each other, at the point marked A, an arbour of grape vines. This is cheaply made, by putting at the corners of squares 2, 3, 6, 7, strong cedar posts, and placing strips of good pine or any other timber that will last well. A few choice grape vines, say Catawba, Norton's Seedling, or Bland grape, planted here and properly tended, will give in a few years, not only a well shaded arbour where madam may sit to superintend the operations of the garden, but also in season rich clusters of grapes to furnish dessert for the table. In like manner, by merely putting down cedar posts, hop vines may be planted just inside of the garden gate, and trailed overhead, so as to form a decidedly ornamental and useful object. So much by way of hints at ornamentation.

Now for something more practical, and we begin with the border, which it will be remembered is five feet wide, and runs entirely around the garden. Beginning with the border to the right of the entrance, marked I, which should be devoted to herbs. Here plant Balm, Tansy, Parsley, Challots, Mint, Put Majorum, Sage, Catnip, Thyme, Annis, Confrey. All these are herbaceous plants, except the parsley, which seeds itself from year to year, and they are, without exception, highly useful, as every housekeeper well knows. The border where they are to be planted ought to be made very rich, because when once planted they so remain for years, exhausting the soil without receiving much aid from the manure. True liquid manure may afterwards be applied, and other manure may be applied by carefully forking it in, but it is far better in the beginning to make the

soil exceedingly rich. We place these herbs near the gate because of the facility of reaching them.

The border to the right of the entrance, marked K, from the entrance to the fence, is to be devoted to Radishes, and in order to have this vegetable for a long space, let the border be divided into three or four spaces, to be sown in radishes at different periods. The first sowing may take place in ordinary seasons, about the first day of March, and supposing these to do well, the second space may be sown about the fifteenth of the same month, and so on at regular intervals of fifteen or twenty days, by which course a regular and constant supply of radishes may be secured for the table throughout the whole season.

The side border to the left of the diagram, marked H, is to be divided equally in two parts, one of which is to be appropriated to Raspberries, and the other to Lettuce beds. The raspberries should be planted about fifteen inches apart, and in the middle of the border. The roots will soon penetrate the whole border and cover it with canes. The lettuce should be planted about twelve inches apart in the row, and the rows eighteen inches apart, so that they can be readily cultivated by the hoe. One crop of lettuce may be sown in September and planted out in November. For fall sowing, Brown Dutch is the best. The other crop may be sown in March or April, and planted whenever they are large enough to be transplanted. The best kind for Spring sowing is the India Cape variety.

Next we come to the border in the lower part of the garden, marked P, and on the left side, which, as being the warmest part of the whole garden, we devote to hot-beds and plant-beds. The hot-bed is to be located in the extreme left corner of the garden, and the plant-beds on that part of the border next to the main walk.

As to the balance of the border, we would appropriate it to Figs, Gooseberries, Currants, Horse Radish, Artichokes, and a small space in the most shaded part of the border for a bed for raising Celery plants. The celery seed ought to be sown as early in February or March as the weather will permit, so that they may grow strong before the hot weather sets in.

This disposes of the entire border running round our garden, and arranges in a most con-

venient and compact manner very many highly useful and desirable articles, which ought to be found in every well ordered garden, but which cannot be so well cultivated in the open squares where are other things are grown. So desirable do we regard this border that we urge upon all persons arranging a kitchen garden to devote a reasonable space to this purpose, and if in addition they will stock it with the articles indicated here they will find no occasion to regret the adoption of our advice in the premises.

Square No. 1, being the square next the entrance, is assigned to the cultivation of strawberries, chiefly because being near the house it will be more constantly under the eye of the mistress. For the manner of planting strawberries and all the details of cultivation, we refer the reader to our article in the Planter of last year. This space will hold two thousand strawberry plants, by planting them one foot apart in the row, and the rows two feet apart, and after they come into bearing, this will afford an abundant supply for a large family.—An individual desiring to make such a plantation, need not go to the expense of buying two thousand plants. Two hundred plants bought will, in a short period, furnish enough to cover the whole space, and then by following the system of rotation described in an article on strawberries, to which reference has been already made, the supply may be kept up *ad infinitum*.

Square No. 2 is devoted to Beets, Salsify or Oyster Plant, Parsnips and Carrots, which we group together because they are all planted at the same time, and continue through the summer. Each of these vegetables ought to be sown about the middle of March, and in drills about two inches deep and eighteen inches apart. Two-fifths of the square may be devoted to beets, and the other three-fifths of the square equally to the other three. In sowing beets, sow one-half turnip root variety and the other half long red beet, the former for early and the latter for later use. All of these things occupy the square for the year.

Square No. 3 is intended for Spring Cabbages, to be planted with the earliest plants, whether obtained from the hot-bed or plant-bed.—Plant them in rows two and a half feet apart, and two feet apart in the row. In an article in the Planter of last year, we gave some directions for planting cabbages, which may be of service. These cabbages will be off the land

by the first of October at latest, and the square may then be spaded and sown in Kale for salad. The Kale should be sown broad-cast, and for the space indicated it will take about half a pound of seed. This salad can be used through the winter when cabbages are scarce and early in the Spring.

Square No. 4, at an early period of the Spring, sow in salad, either Kale or any other that may be preferred, which will serve the family until the earliest cabbages, planted in No. 3, mature, when No. 4 is to be prepared for Fall cabbage, which ought to be planted about the first of July, and which continue to occupy the square for the year.

Square No. 5 plant in Asparagus, Rhubarb, or Pie Plant, Celery and Pepper, Cayenne, or the common red pepper. The Asparagus and Rhubarb stand next to each other in the square, because they are herbaceous, retaining their places for years, without removal. We have heretofore given full directions for the culture of Asparagus and Celery, and shall at some future day describe at length the culture of Rhubarb and Pepper. Two or three hundred roots of Asparagus will supply a good sized family.

Square No. 6 is for Spring Peas, Kidney Beans and early Cucumbers. Say one-half of the square is devoted to Peas, of which plant one part in extra early Peas, and the other in Marrowfat, which will give a full supply of peas during the season. The peas are to be planted in rows three feet apart. The other half of the square, in equal portions, plant in Kidney Beans, (Snaps,) and early Cucumbers. All these things are planted between the middle of February and April, and mature and leave the ground unencumbered by the first of July. The square now is to be spaded, and that portion of it which was planted in Peas, may now be planted in Cucumbers, Gherkins, Muskmelons, &c., for pickling purposes. The balance of the square devote to Fall Cabbages.

Square No. 7 plant in Tomatoes, Lima Beans, Onions, Okra and Egg Plants. Half the space plant in Lima Beans, one-fourth in Tomatoes, and the other fourth equally in Onions, Egg Plants and Okra. All these things occupy their places in the square until frost comes.

Square No. 8 plant in Potatoes and Squashes, or Cimblins, for use through the Summer and

Autumn, and when they are exhausted, say about the first of September, sow Turnips for the Fall and Winter. The better plan is not to wait until the entire square is cleared of the Potatoes and Squashes, but begin to sow the Turnips as soon as the roots are partially removed, and so continue sowing from time to time, until the whole space is occupied.

This completes the arrangement of our garden and its stock of vegetables, and with one or two additional suggestions we shall, for the present, dismiss the subject. The first remark in conclusion is, that this garden is intended to be cultivated with the spade and hoe, and is never to be profaned by the presence and operations of the plough. Thus cultivated, and manured sufficiently, it will produce an amount of vegetables which, if stated here, would sound fabulous; but we have not prepared it with reference to the production of a heavy crop for preservation through the winter; as to instance of Potatoes, or even Cabbages and Turnips. When these things are wanted in large quantities, look to the fields for them. The next remark is, that we have endeavoured, in the arrangement of the productions of the garden to introduce something of system, grouping together vegetables analogous in their manner of growth, time of planting, periods of maturity, etc. Again, the chief walk has been made very wide, so that the cart can be driven into the garden loaded with manure, and for the facility of its ingress and egress, we would recommend large gates to be placed at either end of the main garden walk. Again, we observe that there are several things, as to instance corn-field Peas, Pumpkins and the like, which are very generally cultivated by our farmers, but for which we have made no provision. We have purposely omitted such things since they are usually cultivated in the fields and not in the garden. And it may be, that in the hurry of writing, we may have omitted the mention of some vegetables generally esteemed, but for which the intelligent reader can readily find a place. And finally, we shall at some future day, follow up these suggestions with some views upon the proper rotation of garden crops from year to year, in which we shall need to refer constantly to the diagram presented in connection herewith; for which reason we would advise all our readers who



may be interested in these observations, to preserve carefully this present number of the Planter.

The following Calendar of work for the garden for the year is added, in the hope that it may be found useful to some persons: it will, at all events, make our present article on the kitchen garden more complete than it would otherwise be. A literal compliance with its terms is not perhaps to be expected, as the gardener's operations must, to some extent, be controlled by the state of the weather.

**JANUARY.** Make hot-beds and sow Cabbage, Tomato and Egg Plants; and if you have more framing than is needed for these things, you may sow a few radishes, beets and lettuce in the hot-bed.

Collect pea sticks and bean poles and place them conveniently for use at the proper season. Haul manure, repair gates and fences, and rake and clean the garden from all trash, litter, leaves, etc.

**FEBRUARY.** Late in this month you may sow a few Lettuce, Cabbage and Radish on a warm border, which is well defended from cold winds by a fence, wall or anything of the kind.

Sow Spinach in a dry warm situation, the prickly seeded is best for this season, being more hardy than other. Sow broad-cast or in drills about fifteen inches apart.

A few beets may be sown, in rows eighteen inches apart. Sow only a few as it is an experiment.

Parsnips are hardy and may be sown this month, in rows eighteen inches apart. Sow Parsley seed broad-cast.

**MARCH.** In this month put in a full crop of Peas, Salsify, Carrots, Radish, Lettuce, Celery and Potatoes. Late in the month plant Kidney Beans or Snaps. Corn for Roasting Ears, Lima Beans and Pepper, may also be planted. Fork up the Asparagus beds slightly, and late this month make new plantations. Sow Onion seed, of the Silver Skin or Portugal variety, plant Onion Buttons, sow Okra and Salad for the Spring.

**APRIL.** Any seeds not sown last month may be put in now, and additional sowings of radish, peas, kidney beans, &c., may be made. Fork up and stick your peas, and sow marrow-fat for a late supply. Cabbage seeds may be sown in the open ground, flat dutch, drum

head, and savoy. Sow cauliflowers, cucumbers and melons. Remove cabbage plants from the plant beds to the open ground, and any time after the 15th of the month transplant lettuce and tomatoes. Transplant all kinds of herbs, and plant out for seed, the cabbages, turnips, carrots, salsify, beets, &c., which have been reserved for that purpose. The border will here serve an admirable purpose, as these several vegetables can be so disposed at points distant from each other that any mixture of the semen of the different plants may be prevented, and the purity of the seed be preserved.

**MAY.** Sow another crop of peas, snaps and butter-beans. The first of the month is a good time to sow a supply of cabbage seed for winter use. The plants will be large enough to be transplanted about the first of July. The latter part of the month, plant out egg-plants. Thin your carrots, parsnips, salsify, beets and okra, leaving them stand from three to five inches in the row. A few radish may also be sown. When very early tomatoes are desired, you should begin to trim the vines so soon as the bloom appears, as directed in our article in the Planter for 1857.

The want of space forbids the completion of this calendar in the present issue of the Planter, but we shall continue it in the number for the month of March, until the directions for the whole year have been given.

#### Cultivation of Asparagus.

In old times, gardeners used to have a good deal of ceremony in making asparagus beds, paving the bottoms with stone, and using certain definite proportions of this compost and that, without which, they asserted, asparagus would not grow. Experience has proved this to be all unnecessary. A light loam, made very rich, pretty deep down, is all you need for a bed.

The asparagus is a native of the seashore. Of course, it likes a sandy chance and some salt. It has a profusion of long stringy roots which like to spread over a large surface, and to plunge deep. Give them a chance, by spading up, a light loam, two feet deep, and make it as rich with good old manure as you can. In order to have large stalks, give each root fair elbow room. Make rows not less than a foot apart, and two feet would be better, if you had room enough, and set the roots ten inches apart in the rows. If put nearer together, you must feed high and apply the dressing often. In regard to the time of setting out, the fall is a good time, but be sure to mulch

the bed well after you have done it, by covering over well with leaves, or litter, which may be raked off in spring. This mulching will prevent the frost from throwing the plants out of the ground during the winter and spring.

Plants used in this way, will do to cut by spring. They should be cut sparingly, however, until they are four or five years old. In the fall of each year cut away the old stalks, and fork in a lot of old barn-yard manure, and pour on some brine. This will keep up the fertility. You cannot get an asparagus bed too rich, but it should also be light and somewhat porous, and kept free of grass and weeds. By placing a hot bed frame over part of the bed and putting on a covering of fermenting horse-manure in the spring, you can force the shoots quite early, and thus obtain a supply in advance of the remaining part of the bed.

Small cabbages can be kept growing in the ground during the winter only by protecting them by glazed frames, or by some such appliances. We once knew a successful experiment tried in keeping small cabbages alive, not growing, by covering them over pretty thickly with hemlock boughs. This is not always successful.

### To Our Cotemporaries.

In issuing the Prospectus of the Thirteenth Volume of the *SCIENTIFIC AMERICAN*—generally admitted to be the best, cheapest, and most widely circulated mechanical paper in the world—we, the proprietors, desire to sincerely thank our cotemporaries throughout America and Europe, for the good will which they have uniformly manifested towards us since the commencement of our enterprise.

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We respectfully direct your particular attention to our List of Premiums.

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[July '57—ly

## AGRICULTURAL REGISTRY AND AGENCY OFFICE.

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They propose to execute any commissions which the farmers of Virginia and North Carolina may confide to them, and will sell Lands, buy or sell Animals of the various improved breeds, Fertilizers, &c. It is our purpose to keep a Register of all lands and other articles in our hands for sale, which will be open to the inspection of all who may wish to purchase. We will, from time to time, (monthly if necessary,) issue a circular advertisement, containing a brief description, price, location, &c., of all lands entrusted to us. These advertisements will be extensively circulated through Virginia and North Carolina, free of expense to our patrons.

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N. AUGUST,  
J. E. WILLIAMS,

RICHMOND, Feb. 1, 1858.

 At the office of the Southern Planter.

**Prospectus**  
OF  
**THE SOUTHERN PLANTER,**  
**A MONTHLY PERIODICAL,**  
DEVOTED TO  
**AGRICULTURE, HORTICULTURE AND THE HOUSEHOLD ARTS.**  
PUBLISHED AT RICHMOND, VIRGINIA.

**FRANK: G. RUFFIN, EDITOR.**

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