cription REDUCED to TWO DOLLARS Per Annum in Advance

ESTABLISHED IN 1840.

THE SOUTHERN PLANTER AND FARMER

DEVOTED TO

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

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

CH. B. WILLIAMS, ED. & PRO'R. | JNO M. ALLAN, HORT'L EDITOR.
FRANK G. RUFFIN, CO-EDITOR. | WM. L HILL, GEN'L AGENT.

New Series. RICHMOND, VA., JULY 1869. Vol. III.---No. 7.

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FERGUSSON & RADY, Printers, 1328 Main Street.

SOUTHERN PLANTER & FARMER

New Series, vol. 3, May-Dec. 1869

Missing: no. 6, June and no. 9, September

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High, Medium and Low Farming.

POINT OF MAXIMUM PROFIT.

If you ask the meaning of these terms, I reply, reversing the order above: profit is what your crops give you over and above all costs of production. These costs are: 1. Interest on the value of land; 2. Taxes, if any; 4. Value of labor done by yourself or others at the time; 4. Team work; 5. Cost of manure; 6. Wear and tear of implements and farm machinery; 7. Any other cost or costs you may think of, not included in the foregoing.

The interest on value of land must come in as part of the cost, for the reason that you cannot afford to hold land and draw no interest on its value. The taxes must come in, because if your State tax farm land, you cannot escape paying. So of every other item—all must be charged to the crop, and paid by it, before you can begin to reckon profit.

Keep accounts with your farm, and with each crop grown upon it. To farm without keeping accounts, is farming in the dark, and you may not ascertain whither it leads till too late. If you farm in the dark, you may keep on twenty years with some crop which loses you money every year, or may stop with some one which gives you handsome yearly profits, simply from not knowing which to continue and which to stop. Farmers are generally supposed to be men of sound judgment. Their employment is adapted to make

them such. They generally are such. The keeping of farm accounts, so as to throw light from this year's doings on the question, what to do next year, is not easy; but in the exercise of such a judgment as we heartily ascribe to farmers, you can keep them well enough to prevent your going blindfolded many years in courses leading to disaster, and wed you to those tending to prosperity.

By the *point of maximum profit*, I mean that point in the ascending scale from low to high culture, which gives the highest profits over all costs. This is not a fixed but a variable point, varying with the value of land, the price of the crop grown, the cost of fertilizers, distance from markets, etc. As a general rule, where land is dear the cultivation should be high, and of course expensive, for no man can afford to grow small crops on land worth $300 an acre. Small crops would but little more than pay interest on value of land. On land worth but $30 an acre, he might make profit, more or less, from small crops. On land worth but $10, he might make something from still smaller crops. Where land costs but little it may be cultivated cheaply and yet pay; but let a man undertake to cultivate an acre worth $300 cheaply, and he will inevitably find it a losing experiment. Every farmer should endeavor to ascertain at what amount for labor and fertilizers he can grow crops on his land, with a better profit, than by the expenditure of more, or less, for the labor and fertilizers; and that, if he can ascertain it, he may regard as the point of maximum profit in his case.

But what is to be understood by low, medium and high farming? Giving your land little or nothing, and expecting little or nothing in return, is low farming. If all farmers worked in this way, the soil all round the face of mother earth would wax worse and worse, till it would be equal to sustaining but half the present population of the globe, instead of becoming able, under the hand of man, as God designed it, to sustain ten-fold more than its present inhabitants. Yes, God made the land and the sea such, that, by the natural laws he has stamped upon them, this globe must perpetually become better and not worse, as the abode and life-sustainer of the human race, till ten times its present population shall be able to nestle on its bosom and feed on its bounties. The progress will be slow or fast, as man fails of his duty or discharges it earnestly and faithfully. Low farming is athwart the purpsse of the Almighty. He wishes the land to become better for each generation than it was for the last. The man who farms it in a low way, giving it little, taking less, not half paid for his labor, makes it worse.

There may be cases in which a rather low grade of farming is to be tolerated. The owner of a large farm may have reasons of his own for not selling a part of his land to enable him to cultivate the rest better. He may have good reasons, known only to himself, for holding the whole a while longer. But, as a general rule, it is folly, not to say wickedness, to go over large extents for small returns. It affords no profit; it less than pays for the labor; it is the costliest way possible for obtaining the productions of the earth; a wise man will not walk in it long; the man who is both wise and devout, will not dare persevere in it, so manifestly is it opposed to the will of the great and benevolent Designer, who never meant that the farmer should work hard, life-long, for small pay.

Medium farming may be considered half way up the ladder from low to high farming. By the low farming, of which we complain, as against God and humanity, and most of all against the man who practices it; as low as 10 to 15 bushels corn per acre, and other crops proportionally scrimped are often obtained. By medium farming, our idea is 50 to 60 bushels of corn and other crops in proportion. This, in large portions of our country, yet comparatively new, not yet densely populated, distant from markets, freights high, may just about tally with the point of maximum profit. You may perhaps say you can more cheaply win the productions of the soil at this state of cultivation than by one higher or lower. At any rate, by such cultivation as will give you 50 to 60 bushels of corn and the like of other crops, your land will not be run down, and you will not sin against yourself nor against posterity, for it will pay you and will leave those who come after you a fair chance. Perhaps this is as high a cultivation as should be aimed at by the farmers of one-half of our cultivated land.

But this is not high cultivation; it should not be thought of as such; it may be wise temporarily; but as the population increases, it must be superseded. Where population is already dense and outlets to other countries dense, and especially if land be high, larger crops must be obtained, or no great profit in the cost of production can be realized, certainly not the greatest. From 80 to 90 bushels of corn, and proportionably for other crops, should be the aim, under such circumstances, if the land be of good quality. If a failure to reach this mark be attributable to divine providence, in not giving favorable seasons, cheerful submission to a higher power becomes a duty, but if attributable to anything the farmer himself did or failed to do, he should not be satisfied with his own doings, but should try again, and keep trying, till he can grow his 80 to 90

bushels of corn, and other crops in proportion, in an average season, to set off for less in seasons that are unfavorable, that the average yield may be as high as above named, and gradually increasing, as the land, under a system of high cultivation, increases both its productiveness and its saleable value.

Medium farming pays better than low everywhere. High farming pays better than medium wherever the circumstances exist which call for it. Farming in a way that deteriorates the soil, will not pay, in the long run. Farming that improves the soil a little each year, as God made it to be improved by the brains and hands of man, will pay always and everywhere. Thousands of farmers, in all parts of our country, fail of the best rewards of farming by too low cultivation, for every one who fails by cultivating too highly. The danger of failure by going down the scale too low, is a thousand times greater than that of ascending too high. Let us strive to avoid the former, and not be over fearful of the latter.—NASH, *in the Working Farmer.*

Making Manure.

It should be a cardinal principle with every farmer to economize his manure. Upon it depends his success, and, without it, his labors must to a very great extent be without profit, if not attended with absolute loss. If it is necessary to have the barn-yard on a hill-side, it is equally necessary to have the lower side of it protected by a wall, or some arrangement by which the escape of liquid manure may be prevented. It is almost equally important to have a spout to convey rain water from the roof of the barn in some other direction than immediately through the barn-yard. It is bad enough that the manure heap should be exposed to the rains which fall directly upon it, without adding to it the droppings from the roof of the barn.

If such improvident farmers were to behold the actual value of the fertilizing material thus lost, rolling from their purses in the shape of dollars and cents, how energetically would they labor to prevent this waste. The loss of a single little gold dollar would stir them up to a greater activity than the direct waste of a hundred times that little dollar's value in the form of liquid manure. Year after year, silently, steadily, the golden streams are flowing from their purses. Tell them of their error, and they acknowledge it, but rarely does it happen that being reminded of it in a friendly manner, they make a single effort to correct it.

How many are there who, after a lifetime of steady, unremitting toil, find themselves no richer in lands or money than when they began! They cannot explain the reason. Other causes may have led to such discouraging results, but if the drain of liquid manures from their barn-yards had been checked when they began farming, very many of these unsuccessful ones would have been as prosperous as their more provident neighbors.

Every farmer subscribes to this; he knows it well; but thinks he can do no better, "under the circumstances," than to let it go. He thinks, if he had conveniences, he would like to try the effects of liquid manure; but "everything wants doing first," and it gets neglected; or, if he had any vegetable refuse at hand which he could haul to soak up the waste liquid, he would do that, but such waste he has not.

Now, one of the very best things to soak up manure water, and make into the best of manure, is common clay. It will pay any farmer well to haul clay to his barn-yard for its absorbing properties. When this cannot be had, the washing of roadsides, cleaning of ditches, or anything that comes to hand, may be used instead. There are many other more complicated ways of "making manures" by chemical ingredients, but this is a simple one, which every one can understand. All it wants is the command of labor, and this is the main point in which so many farmers err. Not to "employ much," but to do all possible one's self, and let the "rest go," is the general plan. The farmer forgets that when he buys a ton of guano he has employed sailors, ship-owners, commission merchants, and many others, at a rate at which another hand on his farm, employed at nothing else but making manure, would have produced him immeasurably more value. It is not so much what is made, as what is saved, that leads to riches; and how to economise in manure, and yet have an abundance, is one of the great secrets of becoming a rich farmer.—T. Meehan, *in Forney's Press.*

To be Noted.—In a cloudy morning it is a matter of importance to the farmer to know whether it will be sunshiny or showery in the afternoon. If the ants have cleared their hole nicely, and piled the dirt up high, it seldom fails to indicate a clear day, though it may be cloudy until eleven o'clock in the forenoon. Spider webs will be very numerous about the tops of the grass and grain some cloudy mornings; and fifty years observation have shown the writer that these little weather-guessers seldom fail in their prediction of a fair day.

Clover as a Renovating Crop.

Some idea of the relative value of the manure made from clover, and common stable manure, the greater part of which is carbonaceous matter, may be obtained from the careful experiments of Professor Lawes. The results of his experiments have been given to the world many times through the agricultural press. I had my attention first called to them about a year ago by an article from the pen of Mr. Joseph Harris, in the *American Agriculturist.* Since then I have examined the matter somewhat carefully, and have been, I must own, astonished at the results of repeated chemical analysis of this plant, made for the purpose of showing its vast superiority over all other grasses as a hay or forage plant.

According to Prof. Lawes, the manure from a ton of straw is worth about $2.60, taking the price of artificial manure as a basis. The manure from a ton of clover hay is worth a little over $9. Allowing two and one-half tons of manure to a ton of straw or hay, then a ton or ordinary load of manure from straw would be worth about $1, while a load of manure from clover hay would be worth about $3.50. The former would hardly be worth drawing into the field. Certainly not worth buying at $2 per load and drawing a long distance. The value of any manure depends upon the amount of potash, nitrogen and phosphoric acid it contains; the carbonaceous or woody matter being usually in excess of that required by the soil. According to Prof. Lawes, a ton of common barn-yard manure contains 8 lbs. nitrogen, 11 lbs. potash and soda, and 4 lbs. phosphoric acid; while a ton of manure made from clover hay contains about 20 lbs. nitrogen, 16 lbs. potash and soda, and 5 lbs. phosphoric acid. Nitrogen being confessedly the most valuable element, it will be seen at once how much more valuable is the manure from clover than from straw or other hay. And let it be borne in mind that while it returns so much more to the soil, it takes much less from it, and that while timothy exhausts land almost as much as a crop of wheat, clover actually benefits it, by absorbing instead of dissipating ammonia. Farmers, I believe, do not generally understand this difference. Hence, in selling hay, many prefer to sell the clover because it is "coarse." But when men understand that in selling a ton of clover hay they are parting with what if fed out would be worth $9 to them in manure alone, besides its value as fodder, I think they will decide to feed out their clover and sell some other kind of hay, if any. Perhaps farmers will not believe these figures; but the estimates are made from careful

analysis, and are no doubt approximately correct. The prices, of course, are based upon the price of artificial manures in England. But let the price of these be what it will, it does not affect the *relative* value of clover and common barn-yard manure. If a load of the latter, a great part of which is straw, is worth $1, then a load of manure from clover is worth $3.50. Now the clover ploughed under, it would be worth a little more—as there is a loss of about five per cent. in feeding out, which goes to make blood, bone, muscle, &c., in the animal.

It has been the practice of many very good farmers in the Middle States for many years to sow clover to plough under; planting corn or potatoes on the clover sod. This method, when hay and its products, beef, mutton, butter and cheese were cheap, was undoubtedly a good one. But with present prices and with a scarcity of hay throughout the country every year or two, it seems to me, that now it would be a wasteful practice. I believe a much better way is to cut the clover for hay and return the manure to the soil. Surely the value of the fodder will pay for curing and carting both ways. Or, if one objects to mowing, it may be fed off with fattening sheep—oil cake or meal being fed to them at the same time—against which practice no objection can be raised, that I am aware of. In either case the loss would be trifling, and a good deal of valuable fodder would be saved. The roots, of which there are said to be from 20 to 40 tons to the acre, are of course subject to no loss at all. At present prices it seems bad policy to turn under a good crop of clover. If the crop be a light one, undoubtedly the best way is to depasture it with sheep. In this way the manure is distributed evenly over the ground. Sheep are also popularly supposed to manure the soil by simply lying upon it; imparting, it is said, nitrogen from the yolk in the wool. It is probable that there is some truth in this idea. At least the heavy rains of spring and fall must wash out portions of the yolk, which is well known to be exceedingly rich in fertilizing properties. However this may be, it is certain that land sown with clover and depastured with sheep becomes enriched to an extent surprising to those who have not practiced this method. This plan would also save the necessity of turning out sheep in the mowing fields in the fall, to their very great injury—unless covered with an abundant rowen.

"But," says one, "my land won't produce clover. It's of no use to sow it—it won't grow."

Very true, and reason enough for it. It has been exhausted of the phosphates, and of potash and soda, perhaps, by long continued

cropping with potatoes, followed with oats or barley, without manure. At least such is the case with nine-tenths of the land that will not produce clover. But if it will not produce clover, it will not grow anything that will pay expenses of cultivating. In order to start clover upon such lands it will be necessary to use top dressing of some kind. On heavy clay soils lime or plaster will often be sufficient. These seem to disintegrate the soil and set free elements that were before locked up and useless. Lime also acts mechanically, making the soil more porous and less liable to bake; while plaster is supposed to absorb ammonia from the air. Ashes, I believe, are the most valable top dressing for sandy land where barn-yard manure cannot be obtained. Sown at the rate of from 30 to 50 bushels to the acre, ashes produce a most marked effect upon clover. Last spring I sowed a piece of sandy land, a portion of which had been top dressed with leached ashes the previous summer, for barley, seeding with clover. No other manure was applied. Where the ashes were used the clover came up thick and stout, but where no ashes were used it could hardly be seen.

Once get a good stand of clover, and other crops may follow. Perhaps a good and profitable rotation on ordinary loamy soils, would be: 1st, clover sown with top dressing, if needed, on inverted sod; 2d, corn or potatoes, with a heavy dressing of barn-yard manure ploughed under in the fall (?); 3d, wheat or barley and clover again. The first crop of clover might be mowed or fed off with, or ploughed under, according to the previous condition of the land. If in good condition enough to produce a fair crop of hay, it might be mowed one or two years before ploughing. This would insure a good supply of roots, and the pulverization of the soil. What we want is to plough the land while the clover is large and vigorous, in order to get the benefit of the immense weight of roots. There is nothing equal to a clover sod for any kind of hoed crop.

It is evident that we must sow and *grow* more clover—not only as a hay crop, but to renovate our worn out fields. It will not do to crop with oats and potatoes, year after year, and then say, "It's of no use to talk about renovating *my* land with clover; it won't *grow*." It *will* grow. It may require something to start it; but after that, being what is called a leguminous plant, it will derive its chief nourishment from the air. This is one reason, probably, why plaster acts so beneficially as a simple top dressing, as it is well known that sulphate of lime "fixes" the ammonia, which is being constantly evolved by heat, by fermentation, and perhaps by the growth of plants. Clover also acts mechanically upon the soil—

sending its long fibrous roots down into the sub-soil, and bringing up fertilizing matter before inaccessible as plant food. In this way it acts both as a disintegrator of the soil and as a conductor of fertilizing elements from the lower or sub-soil to the surface. Finally, clover is the best and cheapest known eradicator of weeds. Sown liberally upon rich soil, it completely chokes out even the strongest and most noxious of our field weeds—and in this way saves the farmer an incalculable amount of labor.

I have written upon this subject at much greater length than I intended when I began—for which, Messrs. Editors, and readers of the *Farmer*, I beg pardon—hoping that more experienced cultivators will at some future time write upon this subject.—YOUNG FARMER, *in the Maine Farmer.*

South Norridgewock.

The Farmer.

A BEAUTIFUL WORK OF NATURE AND ART.

Mr. Geo. William Curtis has given to the public the following beautiful picture, recently painted by him while summering at Ashfield, Mass. He calls it "The Farmer." It will undoubtedly be extensively copied throughout the country. He says:

But the farmer stands still nearer to Nature, and she is his immediate teacher. Nature herself gives him the broad hints of his art. The sun warms the earth; the winds sift it and dry it; roots loosen it; the dew and showers moisten it; the dead leaves and birds manure it. But this is only a vague suggestion. So the wind draws imperfect sounds from the strings of a harp. But presently man, the master, comes, and sweeping the strings with knowledge, he pours out a melody which becomes the hymn of nations. And so the farmer, following the hint of nature, is the master musician who touches the landscape with skillful art, and plays a tune of peace and plenty all over the globe.

Behold, then, the splendid scene of his labors. Sunrise and morning, the moon after the sun as the echo follows music; granite hills enchanted by distance into rosy clouds, drifting along the horizon—groves, pastures, rivers, blooming fields; the song of a thousand birds, the hue of innumerable flowers; the rustle of leaves, the hum of insects marking the changing months with varying sound; the breeze that whispers and the wind that roars; the unfailing procession of the seasons circling through the heavens—all that is grandest and most graceful, tenderest and most terrible

in nature are his familiar associations. He learns by experience what science constantly discloses, that there is nothing useless or superfluous in nature. "The whole," as old George Herbert sang:

> "The whole is either his cupboard of food,
> Or cabinet of pleasure."

But while this is the magnificence of his workshop, see also the direct moral influence of his toil. The earth in which he works is just and honest. If the farmer sow wheat the ground does not return him sugar-cane. If he transplant carelessly the tree, like a neglected child, will pine and die. If he plant potatoes and shirk hoeing, the weeds will shirk dying and the potatoes will shirk growing. If he be stingy of manure, his fields will be equally stingy of crops. Thus the eternal sincerity of nature giving him peas for peas and beans for beans; fair crops for patient industry and weeds for idleness, passes into his character, and he does not send his barrels of apples to market with all the large fruit on top, nor sell a horse with blind staggers to a man who paid for a sound animal.

So the necessities and fatigues of a work that can be done only by daylight call the farmer with the sun in the morning and the morning star in winter, send him early to bed and teach him regularity. Then as by his ceaseless toil he counts out, in blows of his arm and drops of sweat, every hundred cents in every dollar he earns—every penny stands for so much time and muscle, and thus he learns economy. With economy comes frugality and temperance, and so upon the farm grow the hardy virtues, like tough trees upon the rough mountain-side, and so the ideal farmer is the strong, robust, simple, sensible, truly conservative citizen, and as the spectator sees him standing crowned with content in the midst of his rural realm, he asks, as the poor clergyman asked his richer brother, as they walked through the rich minister's magnificent estate: "What, Brother Dives, all this and Heaven too?"

But look once more at a still finer spiritual result of the conditions of the farmer's life than any of these. See what pains he wisely takes to secure a perfect fruit. How cautiously he imports and examines the stock; how sagaciously he grafts and buds; how he hides the tree from the frost and nurses it in the sun; how he ponders and studies the habits and diseases of that fruit; how he toils to surround himself with perfect trees, that he may walk in the garden of the Hesperides whenever he goes into his own orchard. At last he plucks the pear in triumph. It is the glory of the fair. The dimensions of that fruit fly round the world by telegraph, over

the land and under the sea. It is photographed, engraved and described in a hundred horticultural papers and magazines; the mouth of the public waters for that pear, and it bears the name of the happy grower forever. Is that all? Is there nothing more? Look! Not yet has the farmer reaped all his harvest of success, nor tasted the finest flavor of his fruit. But when walking under his trees in the cool of the day, God meets him in the thoughts of his mind—for when a man thinks a lofty thought it is as if God met him—and says to him, "You are a tree in my garden of the world, and if you sought the sweet fruit of character and a noble life, as carefully as you trim and water and bud to produce a pear, the world would be again what it was when I walked in Eden," then the farmer has learned the last lesson of his calling as at all other human pursuits, for he perceives that as a tree produces a flower not for the sake of the flower, but for the seed which the flower covers, and which will reproduce the tree—so it is not the wheat, though it grew a thousand bushels to the acre, nor the pears, although a single one would feast the country, but it is the manhood and moral development of the farmer himself, wrought out by perpetual contact with the beautiful processes of nature, which is the crop of lasting value that grows upon his farm, a crop whose harvest is human happiness. * * * *New York Evening Mail.*

"Knowledge is Power."

The best capital with which a young man can start life is a sound and well cultivated mind. We hear a good deal in this utilitarian age about safe investments, and insurance against loss, but knowledge, the wealth of a well-stored and disciplined mind, is the safest investment of time and money, and the wisest insurance against the misfortunes and difficulties which we have to encounter in the tug and tussle of life. But the great effort of the mass of mankind seems to be to secure the material blessings of life, even at the expense of intellectual and moral nature, and to protect them against the disasters of change and chance by all the safeguards which the ingenuity of human invention can devise. Men spend toilsome days and nights to heap up riches for others to enjoy; to leave a princely dowry for profligate sons to squander in the beastly gratification of depraved tastes and appetites, or after having clutched and hoarded their money bags to the very last inch of time, with affected generosity, to rear up a monumental pile of bricks and mortar for the promotion of some educational or benevolent object,

in order to gloss over the stains of a mean and niggardly life. In the constant fluctuation of material values, and amid the financial and political shocks, which are ever and anon convulsing society, all mere pecuniary investments are liable to be swept away by these disastrous convulsions. Few indeed are the safeguards around property, which can stand the tide of social and political revolution. Banks and other corporations may break and stocks become worthless; bills of exchange may be protested; men may become bankrupt, and private obligations be repudiated; in fact all the representatives of material value, like an unsubstantial frostwork, may vanish under the touch of the demon change, and utter financial ruin sweep over society; but the man who has a mind strengthened by constant exercise and filled with gems of thought, gleaned from the treasure-house of ages, and a will which quails before no opposition, has a store of wealth which is unaffected by all the misfortunes which overwhelm more sordid things, and is panoplied in an armor that can defy disaster, and win success amid the wreck and ruin of all other sources of power. Let it be the first aim, then, of every young man to secure a thorough education, and having done this, he will then be qualified to take any position which circumstances may offer, and thoroughly prepared to enter with courage the great arena of life. Knowledge is in truth the lever, for which the Grecian philosopher longed, by which the world is moved. And that father who wears out the machinery of life in heaping up wealth for his children, while their intellectual and moral culture is neglected, is sadly blind to their truest interests, and thoroughly insensible to all the nobler emotions of man's nature. I know no truer object of pity than the man whose pleasures are purely material; who has no æsthetic aspirations and joys, but who surrounds himself with the base and sordid things of earth, and seeks his enjoyment in these alone. Such a man is ill-prepared to breast the tide of misfortune, and when disaster comes and sweeps away these groveling means of enjoyment, he stands, like a blasted tree, stricken by the lightnings of heaven, the poorest and most miserable of all the sons of men, being cursed with the double poverty of mind and estate.—H., *in the Deaf Mute Casket.*

A CORRESPONDENT of the *Rural World* has a very good opinion of the Harrison potato. He thinks it more even in size than the peach blow, and that it looks better and tastes better, and is seldom hollow inside. He also says the potatoes lie in a bunch in the hill.

Mr. G. C. Gilmer Working out his Problem.

Messrs. Editors,—Your May No. contains an assurance from Mr. G. C. Gilmer that he is in a fair way of working out his theory of farming, published in May No., and reviewed in June, 1868, by his "Friend Ficklin."

These opinions are assuming a serious form, since they are re-asserted as a whole, and liable to make converts to a theory it will require several years to test; and should failure ensue, it will fall heavily on the class of struggling farmers to whom his system is most applicable. He carries his eggs in too few baskets, and lets go his hold on mixed husbandry, avoids stock, and works but "two ploughmen" as a regular force and other hands as "a frolic in busy seasons." *Now*, four hands on a six hundred acre farm is his practice, and to do all the work the year round. One of these hands is his manager, who tells his *sanguine* employer that "he has conquered the bushes, broom-straw and briars in the field on which he had attacked them, and, with his present force, in three years more he could bury the last member of these unsightly and unprofitable pests." Stick a pin here.

Mr. G. assumes, on his own responsibility, that he will cultivate his 600 acres of open land better and cheaper with this force than he formerly did with 22 slaves; if better, then he is wonderfully reconstructed and improved by new examples of industry and thrift around him. With this increased leverage of 4 against 22 hands, he proposes "to put in 10 to 15 acres in corn certainly, not over 20," and give his four hands time "to devote to fencing, clearing up, ditching, picking up rocks," &c., for seeding rye and wheat in the fall. Why rye instead of wheat? Mr. G. theorizes what is best suited to a large body of farmers, and if they adopt his policy, who is to raise the excess of corn needed in the country around him? who to raise stock and give employment to all others than the few *magical* hands to be had of the class he employs? and who will send grist to his mill that enables him to live and raise but *garden spots* of corn? How much?—tell, Mr. G. And if your neighbors curtail in corn as you do, how much must you add to your crop to make up the toll from others?

Are you not, Mr. G., breeding from four fine mares, and had you not better increase your stock of cattle and sheep to assist in destroying the sassafras, sedge, briars and pests in their *season*, and some of your *excess* of forage in winter and early spring, as well as hogs to eat what excess of corn you *ought* to raise, since the latter

produces bacon worth now 20 to 25 cents, equal to an average of 15 cents for pork?

Lastly, Mr. G., tell us how the "100 acres in yard, barn, garden and truck patches" are managed "to pay," and favor us occasionally with reports how your theory is working out, and *particularly* your *results* from your farm, and which of the many fertilizers you are trying has done most towards these results. F.

Agriculture.

THE BEST FARMER IN THE COUNTY.

The name of the county is not material, nor would the honest, industrious man who is generally admitted to beat all his neighbors in the quantity of his crops, and the general excellence of his tillage, be pleased to see his name paraded before the great public. He lives about twenty-five miles from Philadelphia, and the fortieth degree of latitude is very near his north line. His area is a little over 200 acres. More than a hundred years ago, when Benjamin Franklin was the most conspicuous citizen and the ablest editor on this continent, the ancestor of our hero came hither from Wales. In the quaintness of those colonial days he spelled his name with a double-f and double-o. His son took the clearing, and pushed the ring fence of old oak and walnut further and further from the center. His son succeeded, and *his* son and *his* son, to the present generation. Now these ancestral acres are hallowed by the labors of a pedigree of farmers who all followed in the footsteps of one general father, earning their bread and making the bread for many other mouths by honest sweat, and wearing to their coffins the bronzed face and the calloused hands.

The soil is a light clay loam, so admixed with sand as not to hold water except on two or three low places that have been thoroughly tile-drained. There is not a stone, nor a stump, nor a log, a clump of bushes, or a nest of weeds on the place. The whole area comes under the ploughshare once in four or five years. The general surface of the region is level, but on this place are two swells, very moderate indeed, not worth noticing by one accustomed to hills, yet just sufficient to allow good drainage. We mention these details because there are thousands and thousands of such farms all over the great West—farms that could be made just as productive and as profitable. The average American farm is nearly 200 acres, and as the art of agriculture is now understood and practiced, this is the best size for regular tillage husbandry, such as the best

farmer in the county carries on. As this statement will not be received by some, and as it is wide of the catch words, "Ten Acres Enough," we will give a few reasons for the faith that is in us: 1. Except in the vicinity of cities, where the manure of great stables and breweries can be obtained, the profit of farming must depend on the use of yard composts. The quantity of this must depend on the number of animals kept, its strength on the quantity of rich food which they consume. The same attendance and labor will feed and fatten the animals on a two hundred acre farm that would be required on a hundred acre farm. 2. In the improved condition of all farm tools, it will not pay to use poor, old-fashioned implements. The progressive farmer will have the best; they cost several hundred dollars, and when bought they will do the work on 200 acres as well as 100. 3. On a large farm the fields are larger, the roads longer, not so many bouts, headlands, fence-corners, and dead furrows.

If the farmer's methods are good and his thinking sound, it costs no more to spread it over a larger area. If a man can plan well for a good crop of wheat from 20 acres, he can plan as well for 40, 60, or 80 acres.

On the other hand, when a farm is much over 200 acres in area, there will arise a grave difficulty in harvesting grain and grass at precisely the right time. The more acres one has down, the more dependent he becomes on the weather, the more risky and speculative becomes the business of agriculture.

This farm is divided into fields of not over fifty acres, nor none less than fifteen. Many interior fences he has removed, and more might be. His general plan is to have about fifty acres in grass. After cutting three or four crops, of about $2\frac{1}{2}$ tuns per acre, he turns the sod under in April and plants corn. In a few cases he allows corn to follow corn, but not often. The upturned sod is further enriched with yard manure, which is well harrowed in, the harrow teeth being small and short, so as not to disturb the sod.

When the season is a good one he gets 70 bushels to an acre, and sometimes 80, but these are exceptions. On a rich soil like his, in this climate, the tendency of corn is to run to stalk, and his difficulty is never to get it to grow tall, but to make the ears correspond to the bigness of the stalk. Here is one of the unsolved problems in our tillage. One might suppose it easy to lift an acre from a capacity of 60 to 80 bushels in corn by extra doses of manure, just as it can be raised from 40 to 60. But let the farmer try. If

the season suits he will get corn stalks that run up like fishing rods. Some of the tallest will have no ears at all, others 12 or 15 feet high will give one nubbin eight feet from the ground. With fifty acres in grass and fifty in corn, our farmer has one hundred left for pasturage, roots and small grain. Most cultivators would allow thirty or forty for pasturage; he does not. This year he has nearly fifty acres in wheat, fifteen in rye, and will put in fifteen acres of potatoes. Like Mr. Mechi, he believes in the plough, and would not keep wide reaches of old sod. Of wheat he raises from 18 to 25 bushels per acre. In this great cereal we have another unsolved problem. Any good farmer will say that by using more manure he can get a ranker growth of blade and stem, but his bushels will not be increased in proportion; for the crop will begin to lodge by the middle of June, and half of it may be flat by harvest. Are these difficulties with our grand cereals—the bars that so often stop the corn grower at 60 bushels and the wheat grower at 25 bushels per acre—are they the work of climate, of shallow ploughing, of the unskillful application of manures, or bad sowing? Our farmer understands potatoes, and can make an acre bring him $300. Like all cultivators of rich level surfaces, he has the rot to contend with. Of the many varieties he has found the peach blow the most popular in market, and the best late potato. He plants about three feet apart each way, and cuts his seed small, so as to allow but one or two vines to a hill. When the shoots are fairly out of the ground he throws a furrow from each side so as to cover them. The potato is such a hardy and vigorous grower that it will push out from this shallow burial and so outstrip the weeds as to gain and keep possession of the surface. He never has use for the hoe, and never manures in the hill for potatoes. If it were not for the rot this crop alone would soon make him rich. He is planting the Harrison this year, well aware of its inferiority as a table potato, but he hopes with this new and vigorous variety to elude his enemy for two or three years. His sales have been of potatoes, hay, corn, wheat, rye, and rye straw, pork, and fat cattle. Experience is showing him the advantage of feeding out most or all of his hay and corn to fattening animals, and parting with no vegetable products of the surface but wheat and potatoes. Such is without doubt his true policy, and he would have been driven in that direction much sooner had there not been, at the edge of his farm, an inexhaustible bed of marl as rich in potash as wood ashes. This fertilizer he has used freely for twenty or thirty years, but of late the conviction is forced upon him that marl has made his land as rich as marl alone

can make it. Quite likely. A highly productive soil contains three or four important substances, such as potash, lime, ammonia, phosphorus. The first of these, potash, he gets in abundance when he applies marl; but for the active, concentrated fertilizers, that make the deep green blade, the long ear, and the heavy head, he must look to rich stable manure, to bone dust, and to guano. White oak is choice timber for a cart wheel, but ten cords of the best oak that ever grew, without iron for the bolts and tires, would not do the farmer as much good as a fourth of a cord *with* the iron. Just so of potash manures. Alone they cannot carry lands to the highest productiveness.

Let us calculate how far this excellent farmer, with his 200 hereditary acres, benefits society. It will illustrate the fundamental value and worth of the ploughman. His wheat crops made into flour supply 200 mouths annually with white bread. His potatoes feed 300 persons a year at the rate at which this tuber is usually consumed in families. If the grass he grows were changed to milk, it would supply 300 persons; changed to beef, it would feed 60 persons. His corn transmuted to pork would give 200 consumers full annual rations. Why should the man who can do *this* aspire to the degradations of local or of national politics? Why hanker after the gambling uncertainties of traffic? Why rasp his temper between the endless chafing of other men's quarrels?—J. B. L., *in New York Times.*

Rye for early Green Food.

The importance of a supply of green feed for stock in the Spring, is very often realized at that time, but generally overlooked at the proper season of preparing for it. Experienced graziers know the value of an early bite. Cattle, horses, and all stock thrive faster for an early supply of green food. Youatt says of the horse: "The Spring grass is the best physic that can be given to a horse. To a degree which no artificial aperient or diuretic can reach, it carries off every humor that may be lurking about the animal. It fines down the roughness of the legs, and except there be some bony enlargement, restores them to their original form and strength." To horses that cannot conveniently have a run at grass, it is especially important that a supply of green food be duly provided for.

There is no plant which so readily offers a supply of this as rye, and we suggest the sowing of a lot either for early pasturage or for

cutting. It will afford a good cutting full two weeks before the clover, and so far as we know the use of it is attended with no ill effects. One of the most successful farmers we ever knew was in the habit of sowing rye in rich lots, chiefly for Spring grazing. If seeded in September, the plant becomes firmly rooted, and affords a great amount of herbage during March and April, until the clover is large enough to graze, and if the stock is then taken off, the yield of grain will be almost as good as if the crop had not been grazed.

A light rich loam is the best soil for rye. It makes a good growth of straw on ground not fit to be put in wheat. But the richer the better of course for a good yield. We would sow not less than a bushel of seed, when intended chiefly for grazing or cutting. Sow early in September.—*Rural Minnesotian.*

The Relations of Plants to their Food.

The agriculturist who would obtain the largest results from a given expenditure of time, labor, money and material, should not content himself with the mere knowledge of the nature and character of the food required for each crop he cultivates, but should also make himself familiar with the physiological action of the growing plant itself upon the various agents presented to it by the soil, manure, the air and the rain. Ignorance in this particular will lead to as ridiculous errors as that of the self-conceited correspondent of a British provincial newspaper, who having in some way or other acquired the information that nitrogenous matter was the basis of the formation of all the tissues of the body, immediately rushed into print with a furious denunciation of the extravagant habit of using bread and meat to support animal life. "What we want," said he, "is nitrogen. Why, then, adopt as the sources of nitrogen, materials which are so expensive, and which contain so much extraneous matter?" He then went into a calculation of the amount of nitrogen contained in the ordinary articles of human food, and triumphantly contrasted it with the quantity which an equal weight of Peruvian guano would supply. He then calculated the relative cost of these two varieties of nitrogenous materials, and indignantly demanded why so valuable a source of supply of the inevitable waste of living tissue had been so long neglected? He also cited numerous statistical arguments to prove the enormous saving which would result from feeding the inhabitants of the Brit-

ish islands on guano soup, instead of those ancient dainties so dear to every British stomach, roast beef and plum pudding.

Of course it is easy to laugh at the ignorance of this reform in gastronomy, and to point out the glaring errors of his theory. But is it any less absurd to undertake to feed a plant without knowing in what form it appropriates its food, and how it disposes of it when once introduced into its organism? Much has yet to be discovered in reference to this matter; but enough is already known to give important practical hints to those who will master truths already acquired, and who will add to their number by careful observations of their own.

Every one knows that there is a great diversity in the appetites of plants, some being what are commonly termed gross feeders, while others are known as moderate in this respect. Much depends, of course, upon the duration of the plant's life, and upon the size it attains at maturity. A large, succulent, rapidly growing plant like corn or tobacco, will, of course, demand more food in a given time than a smaller vegetable, which takes a longer time to reach maturity. The existence of a plant is dependent upon the time it takes to form and ripen its seed, perennials being left out of consideration. Some of our little spring flowers shoot up, expand their blooms and ripen their seed within a few days. Their task in the world being accomplished, nothing is left them but to fade and perish. Others require the entire summer for their maturity, while others again need the influences of two seasons to complete their existence.

It is not our intention at present to enter into a consideration of the varieties of nutrition dependent upon these varying vital conditions, but rather to call attention to certain facts which bear upon all varieties of growth. Every one knows that the young leaf in the spring manifests its greatest activity during the earlier periods of its existence. Chemical examination shows the same fact. Chemical activity is always proportioned—every thing else being equal—to the solubility of the agents reacting upon one another. In the ashes of the young leaves of the beach we find 30 per cent. of potash, while in the same leaves withering in the autumn blasts, but 1 per cent. remains. So, too, phosphoric acid, which existed in the proportion of 24 per cent. in the spring, has fallen to 2 per cent. in the fall. The insoluble materials, on the other hand, greatly increase as the leaf grows larger.

The truth is, the earlier part of the existence of any plant is occupied in preparations for the future. For example, the turnip,

immediately after sprouting, devotes its energies for half the period of its growth chiefly to the production of leaves. At the end of sixty-seven days, the turnip crop, according to Anderson's experiments, had formed twelve thousand, seven hundred and ninety-three pounds of leaves, and two thousand, seven hundred and sixty-two pounds of roots. At the end of the next twenty days, the leaves weighed nineteen thousand, two hundred pounds, while the roots weighed fourteen thousand, four hundred pounds. In thirty-five days more the crop was gathered, and weighed eleven thousand, two hundred and eight pounds of leaves, and thirty-six thousand, seven hundred and ninety-two pounds of roots. Of course it will be understood that these figures all represent equal areas of the same field, cultivated in the same manner. The point to which we wish to call attention is, that during the last period of growth there has been a reduction of the actual weight of the leaves, due to a transference of already elaborated material from the leaf to the root. We thus see that the turnip, during the early and more vigorous stages of its growth, has expended its energies in laying up and organizing nourishment in the leaf, which is afterward carried back to the root.

This is no exceptional case. All plants have experiences more or less simlilar. Thus winter wheat spends much of its early vegetative power in developing strong roots, at the expense of its young leaves. Indeed, it has been observed in the fox-hunting districts of England, that a field trampled by horses in the winter, so as to leave scarcely any wheat visible, has produced far more grain at harvest than another not subjected to so rough a system of improvement.

It is plain, then, that as a general rule it is the duty of the agriculturist to see that, at the beginning of their growth, his young crops shall be abundantly supplied with soluble plant food. There are, of course, some exceptions to this rule, which need not be here considered. The young plant needs a very full supply of food; first, because, as we have already seen, it is busy for the future as well as for the present; and secondly, because its roots being small and weak, it cannot go far in search of nutriment, but must find it on the very spot on which they are growing. A crop well started by a judicious supply of soluble manure, will grow vigorously, and maintain the advantage thus secured to the very end of the season. It is impossible to over-estimate the importance of insuring to the young crop a rapid and active growth at the beginning. More roots are formed, and they are pushed farther through the soil.

More leaves and stem rise into the air, and consequently a far more energetic appropriation of the atmospheric constituents of the growing plant becomes possible. Indeed, the strong, healthy plant is able to rob its weaker neighbor of the nourishment universally distributed throughout the atmosphere itself.—*Baltimore Leader.*

Hints on the Cultivation and Management of Tobacco.

Messrs. Editors,—Some time ago I promised to give you my notion about raising Tobacco, and now proceed to fulfill my engagement. And first, I will speak of

PLANTS.

There is no such thing as raising tobacco profitably without early plants, and yet if earlier than the first of June they will be sure to make narrow leaf tobacco. In selecting my plant land, I prefer to do it in July, for the next year, and choose a valley detached from any field, facing the southeast, on which is a growth of whortleberry and some ivy. I cut off the bushes and timber, but let the leaves and litter remain, and manure it heavily with the best manure I can get. I prefer cow manure, collected in May, and piled under a shelter to protect it from rain. This has fewer grass seeds in it than any other manure. Tobacco stalks answer very well. A little before, or as soon after Christmas as the weather will permit, I take off the leaves and other litter, and if I think there is grass seed that has not germinated, I cover the bed with dry brush, if to be had, putting the leaves on the brush, and burn them; then with grubbing hoes sunk in the ground as deep as possible, giving the handle a wrench, I loosen the ground, but not so as to bring the clay to the top; I then chop with sharp hoes, take off the roots, and prepare for sowing the seed. I prefer not to sow the seed until the 25th February, and then sow about half the quantity of seed (a table-spoonfull is common,) on every hundred square yards; a little before I think the seed is sprouting, I sow the other half spoonfull, and tread without raking. If the first sowing come up well, the second does not molest the first. Thin sowing yields more plants than thick. I prefer to tread when some of the dirt will stick to the feet; the plants grow better trod then than when the ground is dry.

When the plants are large enough, I plant, but would much prefer to set them out when the land is in good order to work; if set out when the land is too wet, the plants do not thrive well; if set out early in the season, and they are large, or if set out in

the evening, and there comes rain on them before they wilt or lap from the sun, they are apt to be narrow leafed; but this may be altered by running a coalter on each side, so as to make them wilt or lap; then it will take a broader growth.

When tobacco is cut and it rains on it so as to make it strut, and the stems turn upward, unless this be corrected the stems will rot, and the quality of the tobacco is, of course, much injured by it; the leaf on each side of the stem loses nearly all the quality of tobacco, and is hard to get soft enough to strip; if the stem be soft enough not to break, the leaf is too soft. When tobacco gets in that state, the best remedy I know of is to re-cut it. Some years past I had a scaffold of tobacco strutted as above. About 12 o'clock I went to it and re-cut one stick; an hour after I went to it; the stems of what I had cut were soft and hung down straight. I then re-cut all on the scaffold. Before night all the stems were soft and tough, and it cured well, having no appearance of ever having been strutted. Since then I have re-cut all that were strutted with good result.

CHARLES BROWN.

Albemarle, Va., June 14, 1869.

[Our octogenarian friend, who has favored us with the above article, prefers to select the ground for growing his plants in this month for his next year's crop of tobacco. For this reason his suggestions are seasonable to those who may desire to adopt his plan for regulating their future practice.—EDS. S. P. & F.]

Disappointment in Swedes and Germans as Laborers.

Messrs. Editors,—I feel it to be a duty I owe to brother farmers to give, through your valuable paper, my experience with regard to white labor. Much has been said and written on the subject, which amounts to nothing more than mere opinions. I propose to give you naked facts, leaving the reader to draw his own inferences.

In the Fall of 1868, through the medium of the Newberry Immigration Society, I ordered from New York three white single laborers. On the 20th November three stout red-faced Swedes arrived at my farm. I put them to work at once in chopping and splitting rails. They performed admirably; so well, indeed, that I ordered a Swede family from New York. (We always have to advance about twenty dollars to pay traveling expenses of each emigrant from New York, including the continued expenses of the Society.) On the 30th of December I received a "splendid" Swede family, as the agent called them, but really as mean and degraded, es-

pecially the woman, as the lowest order of free negroes. I kept them until the 3d of April, when I discharged them, after losing upwards of one hundred dollars on them. The first three determined to go to Chicago, and on the 25th of January also left me, minus several dollars.

I have never seen or heard of a people who eat so much as the Swedes. If a man has to feed them to the extent of their wants, and is not strong in purse, they would ruin him, even if he allowed no wages.

I concluded next to try Germans. On the 12th of February three good looking specimens came on my farm. They did very well for a while. One of them, however, turned out to be crazy, and I had to send him off, losing his traveling expenses. (I have heard of another crazy one in our district.) The other two staid and did tolerably well until the sun commenced shining warm. They loved the shade; would stop ploughing or hoeing, take a rail off the fence and put it across from one pannel to the other, and sit down, and if I didn't show myself they did not work near as much as the freedman on the same place. I finally told them they must work better, or I could not pay them ten dollars per month and board, as I was then doing. They proposed to leave, and with my full consent they departed the 12th of June. While in my service, they staid in my own house, ate at my table, and fared as I did.

I am now done with white labor. This Immigration Society in New York sends to us (down South) the offscouring of the earth—penitentiary birds and lunatics out of their asylums. There have been a great many immigrants brought to this district, very few of whom have been worth their board. I think this immigration business one of the grandest humbugs of the day. H. D. B.

Newberry, S. C., June 14, 1869.

Several English gentlemen who went last September to Virginia to spend some time in hunting in the Blue Ridge, were so delighted with the country that they purchased a large tract of land on the Manassas railroad, near Gainesville. A colony of English will settle on the land in the spring.

A correspondent of an exchange advises American farmers to adopt the rule of many English farmers—that is, never to allow two white straw crops, such as wheat, oats, barley and rye to follow each other.

Fertilizers in North Carolina.

A committee of the State Agricultural Society of North Carolina, appointed "to investigate the subject of producing fertilizers in this State, for sale to the farmers of the State at fair remunerating prices," addressed to the State Geologist, W. C. Kerr, Esq., a letter, stating that "the object of the Society is, first, to ascertain whether the materials exist out of which fertilizers can be manufactured; secondly, to ascertain whether they can be produced in such quantity and form as to compensate the manufacturer and remunerate the farmer," and asking any information he might find leisure to give them on the subject.

To this letter Mr. Kerr made the following reply:

RALEIGH, June 10, 1868.

Geo. W. Whitfield, Esq., Hon. D. M. Barringer, Col. John L. Bridgers, Committee, &c.:

GENTLEMEN,—I have not yet had time to give the subject of your communication the attention which its importance demands, having been wholly occupied with the survey of the Western section of the State. It is my purpose, in a few months, after completing the examination of that region, to take up, in detail, the study of the marls of the eastern counties, and, in connection with them, to discuss the whole subject of our resources of fertilization in this State, and the best methods of utilizing them. But it has occurred to me that it might be worth while, preliminarily, to call the attention of your Committee and of the Agricultural Society to some general considerations which must direct and limit our investigations and experiments in this direction.

Without going into the general subject of manures and the theory of their action upon the soil, it will be sufficient to state in general, that the principal problem of practical agriculture in our State and region is, how to *restore and maintain the supply of lime and humus* in our soils. This is so, partly because these are among the most important ingredients, and, at the same time, the most liable to exhaustion, and partly because, whatever method is adopted of supplying these, the other exhaustible elements are also restored incidentally.

The methods of supplying humus are mainly two: First, the ploughing in of green crops; and, second, the direct addition of it in the form of stable manure, peat, muck, &c.

Lime may be restored directly, as lime, or in the form of marl or

gypsum. And, still better, either or both of these may be composted with the peat, &c.

Since the process of improving soils by ploughing in green crops, however advisable, will not readily nor speedily be adopted by our farmers, and since the quantity of stock in our region is and must long remain utterly inadequate to furnish a supply of stable manure, it is important to inquire whether there are other *available* sources of supply. The immense peat beds of our coast region will at once occur to you as capable of furnishing unlimited quantities for an indefinite period. In fact, there is enough to supply for one hundred years every acre of cultivated land within ten miles of a railroad or navigable river.

As for lime, of course the marl-beds of the same region furnish an inexhaustible supply. The manufacture of lime for agricultural purposes ought to become at once a large and lucrative business. The soils of a very large proportion of the State being of granitic origin, are generally very deficient in this most important element. It might be supplied to a large part of the eastern and middle sections of the State from the marls near the coast, which are often almost pure limestone. This is one manufacture your Society would do well to ecourage.

As to the matter of transportation of peat and marl to considerable distances, I have no doubt that much might profitably be done in that way. Peat, air-dried, loses from $\frac{2}{3}$ to $\frac{3}{4}$ of its weight. The marls of the coast are in many places rich onough in fertilizing ingredients, phosphates, potash, &c., to bear transportation (and where they are not, they might, in some cases, be concentrated by simple mechanical means) over large districts, along the rivers in whose banks they abound, and on the line of the railroads, as is done so extensively in New Jersey.

But this is not the enterprise which I propose for your consideration. It is the utilization of these materials, *together with the waste from the fisheries* of the sounds and rivers of the same section, for the manufacture of a manipulated manure which may be profitably transported over the whole State by water and rail. These fisheries, as you are aware, furnish thousands of tons of refuse and offal annually, which are now little better than thrown away.

Consider the composition of these materials: The marls contain, besides lime, which is the principal ingredient, iron, magnesia, phosphate of lime and organic matter, and some of them, also, potash and soda.

Here is an analysis of a stone marl near Wilmington, given by Mr. Emmons: Silex 20 per cent., phosphate 5, magnesia 4, carbonate of lime 72, organic matter, &c., 2.

When the sand constitutes a large proportion of the marl, it may be separated by simple means, so as to concentrate the more valuable ingredients, as lime, potash, phosphates, &c.

The composition of peat may be stated (as an average of many analyses) to be as follows, viz.

Humus,	84.1 per cent.
Potash,	2 " "
Soda,	1 " "
Lime,	4.2 " "
Magnesia,	5 " "
Alumina,	1.0 " "
Iron,	3.1 " "
Sulphuric acid,	1.3 " "
Chlorine,	1 " "
Phosphoric acid,	6 " "
Silex,	4.4 " "

An analysis of the fish offal gives the following, viz:

In 120 parts, oil,	20.0 per cent.
Other organic matter,	78.3 " "
Lime,	8.7 " "
Potash,	1.6 " "
Soda,	1.0 " "
Phosphoric acid,	7.8 " "
Chlorine,	7 " "
Silica,	1.3 " "

Thus it is evident that by a judicious selection of marls and peats, (and the concentration of the former when necessary,) and the addition of fish offal, (and in some cases, if desirable, a small portion of guano and gypsum,) an unlimited quantity may be made of a fertilizer superior to most of the imported articles, at a trifling fraction of their cost, and capable of transportation to all parts of the State,—a fertilizer which, besides the principal ingredients, wanting in our soils, lime and humus, contains all the other elements of stable manure, or the best guanos. Here, then, you have all the necessary materials in unlimited abundance, without cost, in immediate proximity to each other, on navigable waters, and connected with all parts of the State by railroad. It is not easy

to see what better conditions could exist anywhere for a profitable enterprise of the kind you contemplate.

It will give me pleasure to aid you in any manner in furthering such an undertaking.—W. C. KERR, *in the Sentinel.*

POSTSCRIPT.

To G. W. Whitfield, Esq., Hon. D. M. Barringer and Col. John L. Bridgers, Committee of the State Agricultural Society:

GENTLEMEN,—By way of postscript to a recent communication on the subject of manures, I enclose a brief article on composts, which was recently prepared as a general answer to inquiries on this subject, which are frequently addressed to me by practical farmers in different parts of the State.

With the view of promoting the manufacture of manures in a small way, by all our farmers, and the saving of an enormous amount of material which annually goes to waste for want of a little care and a little instruction, it is desirable to place in their hands a few simple compost formulæ, applicable anywhere in the State, and calling only for such materials as are generally accessible.

Here are two which should be prepared in summer or fall, to be used the following spring; the materials may be either thoroughly mingled and then thrown into heaps, or laid down in alternate strata:

Formula 1.	Peat,	1 cord.
	Ashes,	10 bush.

For ashes may be substituted twice the quantity of marl, or of leached ashes.

Formula 2.	Peat,	3 cords.
	Lime,	5 bush.
	Salt,	1 "

For peat may be substituted muck, leaf mold, pond mud, &c. Dissolve the salt, slake the lime with the solution, and then mix with the peat, &c.

The following may be prepared in any season, and in warm weather will be ready for use in two or three weeks; over-heating should be prevented by watering and occasional turning:

Formula 3.	Peat,	2 cords.
	Stable Manure,	1 cord.

This will give three cords, nearly as rich as stable manure itself.

Formula 4.	Peat,	10 bush.
	Night-soil,	1 "

For night-soil may be substituted the same quantity of guano (Peruvian), hen manure, cotton seed meal, fish, fish-offal, or any putrescent animal matter. A dead horse will convert 5 cords of peat into excellent manure, sufficient to enrich an acre of land.

Formula 5.	Straw,	3 tons.
	Ashes,	3 bush.
	Plaster,	1 "
	Night-soil,	5 "
	Salt,	¼ "

The result will be nearly equal to so much guano. For straw may be substituted leaves, weeds, potato vines, corn stalks, Chinese cane, &c.

Plaster is an excellent addition to any of the above formulæ. To any of them also may be added, with great advantage, yard sweepings, scrapings of hen-house, smoke-house and privy, kitchen and chamber slops, animal offal of all sorts, soot, ashes, waste brine, &c.; all of which are turned to valuable account, instead of being allowed to pollute the air by their noxious exhalations, and to poison the wells by their leachings, as so often happens, especially in towns. These may seem small matters, but they are not so to those who look for the "causes of things," and cannot be so regarded by any to whom the health and wealth of society are not also such.

Perhaps you will not consider it an intrusion if I add a few suggestions on the subject of the revival of Agricultural Societies in the State, and the best means of promoting the ends which your Society has in view.

I desire to call your attention to some considerations on the propriety of organizing three subordinate Agricultural Societies, corresponding to the three natural divisions of the State, viz: Eastern, Middle and Western. These regions are as diverse in their leading geographical, climatic and agricultural features as if separated by half a continent. The eastern division is characterized by the prevalence of level or slightly undulating plains, and by peaty, alluvial and sandy soils; the middle, by a rolling and hilly surface, and clayey and gravelly granite soils; the western, by a succession of lofty mountain ranges, with infinite cross-chains and spurs, intersected and divided by narrow valleys and elevated plateaus, with various soils, generally gravelly and open, often clayey. And these differences are accompanied by climatic features quite as distinctive, the western section being, in this respect, as strongly diverse from the eastern as the latter is from New York. And it

is apparent that the agricultural products, the modes and implements of cultivation, the means and scurces of fertilization—in a word, all those matters which constitute the staple of the discussions of Agricultural Societies, must show a corresponding diversity. What interest, e. g., have the farmers of Buncombe in the discussion and experimentation of marls and peat, or in the cultivation of the scuppernong or cotton? And on the other hand, why should the farmer of Edgecombe or Perquimans waste his time in studying the conditions of stock-raising, or the manufacture of cheese, butter, &c.?

The suggestion I would make is, that the leading farmers of the middle section of the State—Mecklenburg, Guilford, Orange, &c.—unite their influence and efforts to form a Society for the discussion and development of those points which are common to the farming interests of those counties, such as the proper selection and rotation of crops, the best method of renovating exhausted soils, the kinds, sources, manufacture, cost, transportation and modes of use of fertilizers, &c.; while a similar association of farmers in the east take up such subjects as market-gardening, the utilization of marls, peat, &c., the cultivation of the vine, and other matters of special importance to the agriculture of this region; while in the west they will naturally occupy themselves with cattle, fruit, dairy farming, &c.

There would remain a large residuum of subjects, whose interest is as wide as the limits of the State, which would belong to the proper province of the State Agricultural Society. Among these may be mentioned agricultural education, the Agricultural College, the conduct of a State Agricultural paper, the introduction of agricultural implements and machinery; the manufacture, transportation and inspection of fertilizers, the whole matter of immigration and labor, the requisite changes in our system of farming and the like.

You will no doubt agree with me that it is time to consider these matters in a practical way, with a view to immediate and effectual action.—W. C. Kerr, *in the Raleigh Sentinel.*

Will Lime Kill Sorrell?

Several agricultural papers have, during the past year, published a short and comprehensive article on the exterminating of sorrel. The method is to apply lime. The author of the article arrived at the conclusion that lime would kill sorrel, by some such syllogistic reasoning as this: Plants get their sustenance from the soil. Sor-

rel contains an acid; hence an acid is in the soil. An acid is neutralized by an alkali; hence lime will prevent the growth of sorrel. The trouble about this reasoning is, that it abounds with too glaring generalities to be of any value. Oxalic acid, which is a peculiar prineiple found in sorrel, is not likely to be a constituent of the soil on which the plant grows, but is produced from other substances taken from the soil or air by the action of the vital force of the plant. It is, in short, a product of the growth of certain plants, sorrel among the number, just as sugar is a product of the corn stalk, opium of the poppy, and oil of the flax seed or the castor bean. If sugar, opium and oil existed in the soil, the plants that abound in them at certain stages of their maturity would not profit by their presence since they could take them up, only after they were decomposed. We presume, too, that sorrel would not thrive any better on oxalic acid than poppies would on pure opium, while castor beans would show as much repugnance to castor oil as invalids do. Nor is it probable that oxalic acid would long remain in any soil undecomposed, as it is one of the most unstable of compounds, and chemists find it very difficult to keep it from decomposing.

A writer in the *Farmers' Gazette* contends that the growth of sorrel is caused by the presence of carbonic oxide in the air, instead of carbonic acid. He argues this from the composition of oxalic acid, which is the peculiar ingredient of the sorrel plant, and from which it derives its scientific name. According to this theory, excess of carbon in the soil and a disproportionate amount of oxygen circulating through it, would tend to develop the growth of sorrel, because the carbon would be imperfectly oxydized. To prevent this pest or to kill it out, we should then cause a free circulation of air through the soil by deep tilling and drainage. The application of quick lime would not effect this result, as it would result in abstracting the free carbonic acid from the air, and the formation of carbonate of lime. The presence of protoxyd of iron in the soil would also encourage its growth, since it would abstract oxygen from the air and become converted into the sesquioxyd or the peroxyd of iron. So, too, the presence of iron pyrites—sulphuret of iron—would tend to the same result, because both the sulphur and the iron would abstract oxygen from the air more readily than carbon does, and the two substances, becoming oxydized to different degrees, would unite to form the sulphate of iron or copperas. Similar results would take place when other sulphides are exposed to the action of the atmosphere.

According to the above mentioned theory, the application of

ashes, or any form of soda or potash, would result unfavorably to the killing out of sorrel; as their first action is to absorb carbonic acid, and to pass either into the form of a carbonote or bi-carbonate. It is true that in time, after the carbonate of lime, soda and potash have been worked into the earth, the carbonic acid may be liberated from the bases, in consequence of the action of some stronger acid, like humic acid. Thus the secondary effect of the application of alkalies, like those we have mentioned, may be favorable to the growth of sorrel, by causing a growth of better plants to spring up, which will respire carbonic acid from the air, and in turn exhale oxygen; but it must be borne in mind that this would not be the direct effect of alkalies on the growth of sorrel.

Many have the idea that oxalic acid exists in the soil, and that the office of lime or other caustic bases is to sweeten the soil by combining with it; but nothing is farther from the fact than this. And even if this was the case, it would not follow that the application of alkalies would prevent the growth of plants containing it, since oxalic acid exists in sorrel, in the form of oxalate of potash, and in lichen it is found in combination with lime. Lichens contain a larger proportion of oxalic acid than does sorrel, and still it is not unusual to find them growing in crevices of lime-quarries, and it is said that the marble pillars of the ancient Pantheon at Athens are covered, for a considerable distance, with a growth of lichens, the lime of the wrought marble obviously contributing to their sustenance.

It is certain then that the application of an alkali will not work the change that is expected of it—that it will not play the part of an antidote.

Still we think there is reason to argue that the use of any alkalies will greatly help to eradicate plants which contain the salts of oxalic acid, by encouraging the growth of useful plants. But it must be admitted that the way in which it operates to bring about this change is somewhat obscure, and that its method of action can not be pointed out with the precision that characterizes an ordinary chemical formula.

We are not prepared to indorse or to dissent from the theory that plants abounding in oxalic acid owe their development to the presence of carbonic oxyd in the air. Chemists are by no means united in the opinion that this gas is produced by the natural decay of vegetable matter; and the majority of them are, we think, opposed to the theory. There is a strong disposition in all substances that admit of several degrees of oxydation to pass from the lower

to the higher forms in the presence of atmospheric air. Thus the protoxyd of iron will pass into the peroxyd, and sulphurous acid into sulphuric acid.

It must be admitted, however, that carbonic oxyd is generated in large quantities in the combustion of both bituminous and anthracite coal, and to some extent in the combustion of other sorts of fuel. Nor do we consider it improbable that the gas may be set free from carbon during the operation of slow decay. Some time must necessarily elapse before this gas would take on another equivalent oxygen, so that it is probable that it will find its way to plants before it is converted into carbonic acid.

Admitting, for argument's sake, that such is the philosophy of the growth of sorrel, lichens, and other forms of vegetation that contain oxalic acid, let us see if we can prevent the formation of the gas on which they feed. It is plain that we can accomplish this by oxydizing the carbon of the soil to a greater degree than is now done. Mechanically, we can expect much by draining, deeper tilling, and exposing the soil to the action of the air and light.

But what can we add to the soil to produce any chemical result? We think none of the substances that have been recommended, we should have greater faith in than the application of nitric acid, or some of the salts that are derived from it, as the nitrate of soda, or nitrate of ammonia. Both of these salts have been used to some extent in Europe for agricultural purposes, with the most happy results. Nitric acid is a most powerful oxydizer, and is used for that purpose in most operations in the laboratory. These substances must, of course, be used very sparingly—the nitrates pulverized and dusted on the soil broadcast, or dissolved with much water, and applied with a sprinkler. The nitric acid should also be used very sparingly—that is, diluted with several hundred times its volume of water.—*Prairie Farmer.*

Cooked Food for Hogs.

My first experiment was with old corn, in three forms, viz: shelled and fed whole; ground and made into slop with cold water; and ground and thoroughly cooked.

The pigs, five in number, were from the same litter, and were the produce of a good common sow crossed with a Berkshire boar.

In each case the food was given them as fast as consumed, and all possible care taken to avoid any waste or irregularity of feeding; in every case of a change of food three days were allowed be-

fore the weighing for the experiment, in order that the effect of a sudden and entire change of diet might not affect the result.

I found that five bushels of whole corn made forty-seven and three-fourths pounds of pork. Five bushels (less miller's toll) of corn, ground and made into thick slop with cold water, made fifty-eight and a half pounds of pork. The same amount of meal, well boiled and fed cold, made eighty-three and a half pounds of pork.

With the whole corn the pigs had the slops from the kitchen (no milk), and for drink with the boiled mush, one or two quarts were thinned with cold water or slop from the house; in each case the house slop was used in some form or other, but all the milk was reserved for small pigs. The fifteen bushels of corn cost one dollar and thirty cents per bushel; and you will notice that while the pork made from the whole corn barely paid for the corn, that from the same amount of ground corn cooked paid the whole cost of the corn and a little more than one dollar per bushel over, and that the economy of grinding and making into slop will fully warrant the extra trouble and expense. How could it be otherwise, when the whole economy of profitable feeding consists in bursting or breaking the indigestible hull which incloses the minute particles of food?

In the above experiment the data are based upon pork at fourteen dollars per hundred weight and corn at one dollar and thirty cents per bushel; but it will apply as well to other prices.

The second experiment was exclusively with new corn, in two forms, viz: on the ear, and shelled and ground before boiling; and all in each case was what we know as "nubbins" or soft corn. The best of this class of corn was reserved for the pigs and the worst fed to the cattle. Ten bushels on the cob made twenty-nine and a half pounds of pork, fed in the usual way, on the ground. The same amount shelled, ground by horse-power, and well boiled, made sixty-four pounds of pork. Of course a portion of that fed on the ear was wasted; but it is the common plan, and forms but a fair test of the comparative merits of cooked food. I have made no experiment with sound, new corn, but may have a favorable opportunity before the season is past; but would suppose my experiment with old corn would form a good criterion to judge by.

I have found that there is economy in allowing the food to become thoroughly cold before it is fed; that in this state a larger amount will be eaten, with more apparent good appetite; that while scalding is beneficial, thorough and prolonged cooking under pressure is more economical. In more than one case I fastened the lids of the barrels down until the pressure was as high as five

pounds per square inch in the barrel and steamer, and an examination into the condition of the food convinced me that its globules were thoroughly burst, and it was all, or nearly all, rendered available. During a given time, the same pigs will consume rather more corn cooked than uncooked.—*Practical Farmer.*

Deep Ploughing in Autumn.

There is, probably, no one of the labors of the farm, about which there is so much controversy and such diversity of opinion, as that of ploughing. We believe that if the question were asked to-day of ten farmers, which method of ploughing, whether deep or shallow, in autumn or spring, they believed to be most desirable, not three of them would agree on any particular system, but each would furnish a theory of his own, that would, in some cases, be entirely opposed to those of some of the others; and this goes to show that ploughing is a labor entirely dependent upon circumstances of soil and crop, and that no arbitrary rule can be made to apply to all cases. We believe that the weight of opinion is, that in autumn, on a majority of soils, deep ploughing is preferable to shallow; and in spring that six inches is in most cases the greatest depth advisable; and when we look carefully into the matter, we readily discover why this should be.

Frost is a well known disintegrator and ripener of soils, and when they have been exposed to its action, its beneficial effect upon them has always been apparent. On all qualities of soil has this been noticeable.

Now if we have a green sward overlaying a heavy clay subsoil, if the latter were not broken, we can easily see that, acting as it does, as a perfect water shed, entirely unabsorbent, the falling moisture must, of necessity, remain collected in the upper soil, the effect of which would be to render it cold and sour; but if the clay be broken in fall by a judicious deep ploughing, (even subsoiling, if it is broken in its place, and not thrown to the surface,) we can see that, as clay when broken is very absorbent, the effect must be to warm and mellow the upper soil, and even deepen it, the frost mechanically amalgamating the strata to a considerable extent.

We do not, of course, wish to be understood as recommending deep ploughing on all heavy lands, for when they are not thoroughly drained it is undesirable, and even to be avoided; but where thorough drainage has been attained, we believe that the heavy, clayey

subsoil should be broken, and the whole exposed to the action of the winter's frosts.

At the meeting of the State Board of Agriculture at Concord, last winter, this matter of fall ploughing was fully discussed, and the weight of opinion decidedly seemed in favor of deep ploughing of heavy lands. Mr. Hubbard, of Brimfield, found in his experience in the cultivation of certain crops, that the fall is the best time to plough the ground; he thought that all will concede the fact, that the land, if it is heavy, clayey soil, can be worked much earlier in the spring by putting the manure on, and ploughing it in the fall. He did not care how soon it is put on after the crop is taken off; his advice was to "spread it on, plough it in; and so far as my experience goes, I have got a better crop in that way than by allowing the land to remain until spring, and then putting the manure on and ploughing it in."

Mr. Ward, of Monson, thought that much depends upon the ground to be ploughed, whether it is ploughed in the fall. "If you have a tough, hard piece of ground that you desire to break up, it is better to plough in the fall; the frost has considerable effect upon the hard soil, and I do not think there is any very great loss by the wind blowing off the surface soil. I think a light soil may as well be ploughed in the spring as in the fall."

Mr. Thatcher, of Lee, in speaking of deep ploughing, in describing a subsoil attachment for a plough, said; "We are now using in southern Berkshire, a plough which turns over the sod from six to seven inches, with a subsoil attachment running from two to four inches, which still does not lift the virgin soil the first year to the surface. This attachment running behind the mould board to the depth of four inches, usually stirs the whole width of the furrow to that depth after we have turned over the sod.

"Our idea is, that by loosening the subsoil by this attachment, we enable the rains to soak down through, which they would not do, our subsoil being clay, (which will not take in water unless the earth was loosened,) and our corn roots run down there to get their moisture. The effect of the manure is felt there; and the second year, when we come to plough up again after this stirring of the subsoil, we drop our plows down and throw up part of it. I think we certainly in our northern country derive a benefit by stirring the soil the first year, and very great benefit without lifting it to the surface, and then lifting it to the surface, and mixing it in the succeeding ploughing. I have in my mind now a six acre piece, which would not half feed a cow through the season. We could

not get more than four or five inches of soil before we came to a hard clay subsoil, that retained the water upon it, making the land cold, backward and sour. After ditching that land, and putting in some under-drains, (which, of course, benetted it, without ploughing,) we commenced ploughing this land in this way to get a deeper soil; not using the subsoil attachment that time, because we did not have it, but using a common plough, following the furrow afterwards, and lifting one or two inches at a time. I am speaking within bounds when I say that the second year the crop of corn paid twice over for the labor of ditching and double ploughing. It is as good a piece of land now, I think, as can be found in the town of Lee."

Deep ploughing of heavy lands, then, with clayey subsoils, is to be recommended in autumn, and a plough which turns the sod and lifts and breaks the subsoil, permitting it to fall back into its place, without bringing it to the surface, is the implement which seems most desirable.

Sward land with a gravelly subsoil may also be broken up in autumn, and it is even to be recommended; but it does not seem so essential to us as with the other.

Stirring the subsoil is also in this case desirable, although it should not be brought to the surface. It is well known that lands with a sandy or gravelly subsoil lose their moisture sooner than others, and vegetation, though languishing for the want of it, cannot send down through the hard firm stratum its tender roots sufficiently deep to be supplied. If it is stirred and loosened to the depth of five or six inches below the sward the result must be apparent.

We believe that the matter of subsoil ploughing has not been properly understood, or has too often been conducted in a careless, unsystematic manner, so that when in some cases it has produced unfavorable results, it has been condemned for all others; burying the upper matured soil, and bringing up the cold, raw subsoil to the surface, seems to us to be the great evil which has resulted from injudicious deep ploughing. If this is guarded against in the manner recommended above, we cannot see any objection against, and can see many recommendations for its practice.—*Mass. Ploughman.*

THE time is fast coming when landed proprietors will be esteemed for the condition of their acres rather than for the extent of territory.

New Fodder Plant.

M. Laslier, of Boston, has introduced and is cultivating a plant which he is confident will prove to be a great acquisition to the fodder plants now commonly grown in this country. This is the *Galega officinalis* of the botanist, a native of Spain, and first introduced into England in the latter part of the 16th century. It belongs to a genus of hardy, ornamental, perennial-rooted, herbaceous plants, of the lotus division of the composite order. The roots consist of many strong fibres, frequently jointed, stems numerous, hollow, erect, from three to six feet high. Its flowers are produced in loose spikes from the top of the stem, and bloom from June to September. The pods are erect, nearly cylindrical, from five to eight seeded, and swollen out with air. The color of the flowers is light blue, or light purple, white, or variegated. The variety with which M. Laslier is experimenting is white, we believe.

The plant was cultivated many years ago in gardens for medicinal purposes, but it has of late years been recommended as a forage plant for cattle. It yields a large bulk of produce. Cattle do not appear to relish it at first, and will eat it but sparingly; but, like many other feeding substances, it is thought they will soon learn to like it. At any rate, its composition shows it to possess a high nutritive value, being nearly two to one as compared with good hay; 1.92 as compared with lucerne. A distinguished chemist, Prof. Gaucheron, of Orleans, France, says 412,000 pounds of the Galega officinalis are quite equal in nutritive value to 200,000 pounds of good hay. The plant grows readily in most soils. It may be manufactured into paper.

M. Laslier showed us plants that had come up from seeds sown in the open air in October last. They were about four inches high, and looked not very unlike young clover plants.—*Massachusetts Ploughman.*

Sabbath for the Working Man.

The Sabbath is God's special present to the working man, and one of its chief objects is to prolong his life and preserve efficient his working tone. In the vital system it acts like a compensation-pond; it replenishes the spirits, the elasticity, and vigor which the last six days have drained away, and supplies the force which is to fill the six days succeeding; and in the economy of existence, it answers the same purpose as, in the economy of income, is answered by a savings' bank. The frugal man who puts aside a pound to-

day and another pound next month, and who, in a quiet way, is always putting by his stated pound from time to time, when he grows old and frail, gets not only the same pounds back again, but a good many pounds besides. And the conscientious man, who husbands one day of existence every week, who, instead of allowing the Sabbath to be trampled and torn in the hurry and scramble of life, treasures it devoutly up—the Lord of the Sabbath keeps it for him, and in length of days and a hale old age gives it back with usury. The savings' bank of human existence is the weekly Sabbath.—*North British Review.*

The Effects of Gathering Clover Seed on the Fertility of the Soil Shown—Value of Oil Cake.

I planted potatoes this year on clover sod. The clover last year was cut for hay, and afterwards for seed. This is running the land pretty hard, but as nothing is exported from the farm except the seed, and as a bushel of oil-cake meal, which costs about $1.50, contains more fertilizing ingredients than a bushel of clover seed, the farm is benefitted by exchanging the clover seed for oil-cake. But unless some such plan as this is adopted, growing clover seed impoverishes your land. Last fall, in cutting the clover seed, a strip about the width of the machine was skipped, and you can now see the effect on the potatoes. They are far better than on the rest of the field. I should not be surprised if the yield was one-third or one-half greater, and this will a good deal more than pay for the clover seed. With such effects it is not surprising that many good farmers object to raising clover seed. But I think it is nevertheless true that if the money obtained for the seed is expended in oil-cake, and the manure returned to the land, there is a decided gain. You do not see the effect, however, quite so soon as if the clover was pastured with sheep, or ploughed under.—WALKS AND TALKS ON THE FARM, *in American Agriculturist.*

Let us Manufacture our own Productions.

The nation that exports its crude products or raw material for manufacturing purposes, and imports the fabrics manufactured out of them, as a general rule, never grows rich.

The true secret of national wealth is, for the nation to manufacture its own productions, thereby impressing upon them additional value by every manufacturing process through which they pass, and retaining the profits to herself, her wealth and capital increasing in proportion to the profits realized, both in the growth and manufacture of its productions. W.

Improvement of Worn-out Farms.

BY THE HON. GEO. GEDDES.

"I wish to say a few words in regard to a class of men who have done as much, if not more, to promote the agricultural interests of this country than any other, and yet, since my earliest recollection, they have been sneeringly called *Fancy Farmers!* They are generally mechanics, manufacturers, or merchants who have been successful in their vocations, and who have invested the first money they could spare from their business in land, and in making improvements upon it. They may occasionally have a ditch dug, and find that the water runs the wrong way, but this hurts nobody, and gives employment to those who need it for the support of their families. They do not watch the almanac, and discharge their workmen when the days become short, but employ the poor when the weather and the hours for work do not admit of a compensating return, which the man who has no other means of support than the product of his farm cannot afford to do. These men are to be found in almost every part of our country, and may be known by the houses for their workmen, their land, and their out-buildings being in better order than any others in their neighborhood. They are the first to buy what is called improved agricultural machinery and implements, which do not always prove so. Not being dependent upon their farms, they can afford to experiment; sometimes they are successful, sometimes not; but when they are, every farmer gets a benefit from their outlay. It is largely to such persons that we are indebted for many of the improvements in husbandry, and still they are sneeringly called *Fancy Farmers!*"—[Address of Thomas H. Faile, President of the New York State Agricultural Society, delivered at Albany in February, 1869.

Mr. Faile brings prominently out, in the foregoing extract from his valedictory address, an important point for the consideration of those of us who have spent all our lives on farms, working hard to improve the soil, and to lay up a competence for old age.

The merely practical man may be an adept in the handling of tools, and he may become highly skilled in the application of labor, so as to produce great results with comparatively small means, and thus plume himself on a supposed superiority over his neighbor, who makes farming a recreation and a pleasure rather than a business. He is prone to judge his neighbor by his own standards, and to forget that in one case farming has been the life struggle against pov-

erty, and that in the other it is the reward of successful industry in some more exciting and perilous business. I once asked a successful farmer who in very early life had been a successful sailor, why he left the sea, with all its tempting excitements, and settled down to the cultivation of the soil. The answer was, "To own and cultivate a piece of solid earth is the dream and hope of most men who follow the seas, and I took the earliest time that my savings would allow to gratify this desire." This feeling is not confined to sailors, but is to be found in every branch of active business. Besides those named by Mr. Faile, editors, lawyers, clergymen, and all who live lives of active mental labor, are apt to cast longing eyes to green fields and lowing herds, and to covet the bracing air of country life. When the very few of these men that are able to carry out this desire plant themselves on farms, and turn those same mighty energies that conquered success in the other walks of life to the less exciting but still more important business of cultivating the earth, they are very apt not only to succeed, but to become models and exemplars in their new calling.

William Chamberlain, of Red Hook, Dutchess county, is one of these men. At 16 years of age he left his native hills in Vermont, and in due time became a great merchant, having ships on many seas. Industry, integrity, economy, and sagacity, in due time, reaped its harvest of wealth. The time came when his love of the country and the farm could be gratified; and about the year 1840 he went to Red Hook, and in the Winter, when snow covered the ground, he bought a large farm. His eye told him that the surface was gently rolling, and those of whom he inquired told him that the land was good. The place was near enough the city of New York to be reached in a reasonable time, while he should continue in business in that city, so he purchased what proved to be an old WORN-OUT FARM, that had been producing hay for New York until it had arrived at that condition of things that its principal production was sorrel.

The year 1841 revealed to the new owner the true condition of things. The 440 acres, less 60 acres of wood land, leaving 380 acres under what was called cultivation, yielded seventeen (17) loads of hay. Forty acres of rye gave 10 bushels to the acre; 25 acres of corn gave 20 bushels to the acre; 20 acres of oats gave 15 bushels to the acre. The remainder of the farm was in what was dignified by the name of pasture, which proved adequate to the grazing of one span of horses, two pairs of oxen, and one cow. Not to put too fine a point on the matter, our friend discovered that

mid-Winter was a bad time for judging of the quality or condition of land.

For a more perfect understanding of this case, it is necessary to add to what has been said of the farm by way of description, that the soil is generally a sandy loam, sand strongly predominating. There was a swamp of many acres made by a small brook and some springs nearly in the middle of the farm, that had not been drained, and that was so miry that a yearling steer could not cross it. There is so little lime in the soil that the springs and wells give what is called soft water—such as will answer for washing clothes. This farm lies about 200 feet above the Hudson river, its center about a mile and a half distant from the wharf at Barrytown, and is part of a beautiful plain of several miles in width and length, of gently varying surface, and on which stands the pleasant little village of Red Hook.

According to the standards of the farmers of Livingston county, or of Ohio, this land never was first-rate. There is too much sand, too much ground up granite rock, and too little lime in it to place it in the rank of the best lands; and a miserable system of farming, or rather skinning, had taken from it, by 1841, all that it originally had of fertility. *It was so poor that it would not bear clover.*

We can imagine Mr. Chamberlain's disappointment on finding out the real state and condition of his purchase. Those who know the man will not be surprised to learn that he did not surrender, but that he addressed himself to the work of reconstruction with the same energy that had made him successful as an importing merchant; and that he has succeeded in making this worn-out farm so to re-create itself, and pay its own way, that now it is entitled to rank in productive power with the best lands in this State. I will now describe the process, and give the result.

THE PROCESS OF RECONSTRUCTION.

A few sheep were purchased. Leaves from the wood lands were put in the sheds, and the sheep fed and kept on these leaves. Thus all the manure was saved. The swamp required draining as the first movement toward reclaiming it. Ditches were dug, and the muck thrown from them was drawn into the sheds, and, like the leaves, saved the manure of the sheep. Before investing much labor in handling muck, a simple but conclusive experiment was made to test the question of its value. A single cart-load that in the Spring had been thrown out of a ditch, was drawn, when dry, and

spread over four rods of ground then prepared for a crop of rye. This load, being at the rate of 40 to the acre, produced a very marked effect on the clover that was sown the next Spring, causing it to head out before harvest, while all around there was little to be seen.

The manure from the sheep sheds was piled in the Spring, mixing it thoroughly with the leaves and muck. The straw, corn-stalks, and whatever got under the feet of the sheep was also put into the heap, and composted and made as fine as practicable by the time the land for rye was ready. So much of this manure as was fine enough not to clog the harrow, was put on the land just before the rye was sown, and mixed with the surface by the same process that covered the seed. The coarsest part of the manure pile was ploughed in at the last ploughing. Four quarts of timothy seed to the acre was sown on the rye in the Fall, and the next Spring six quarts of cloverseed was put on an acre, and the last of May or the first of June one and a half bushels of Nova Scotia gypsum was sown on an acre. The manure was applied in light dressings, so as to cover as many acres as it was thought it would answer to secure the growth of the clover and grass.

For ten years the owner, being absorbed in his business in New York, could give but little personal attention to the farm. A hired man was kept on it, who acted under general instructions, and the process was but slowly going on, when, about 1850, improvement really commenced its rapid march. From that time till now Mr. Chamberlain has lived on the farm and given it his personal attention. On land not manured clover would not grow. Thus the manure question became, from the start, the important one. Mr. C. says, in a letter before me: "By drawing leaves, weeds, and every thing that would make manure, I managed to have a nice little pile to top-dress my Fall-sown grain, and was delighted to find I could raise clover, and then I found improvement of the soil quite easy. *I have purchased very little manure;* have tried guano and phosphate, but was dissatisfied with both; purchased two canal-boat loads of ashes at Syracuse, and found them good for clover; but now depend for my manure on the farm supply, and calculate to give to all the land I plough a small supply when I seed it down."

In personal interviews I have learned that guanos and super-phosphates have been fully tested, not merely by the observation of the eye, but by measuring products. Super-phosphates gave corn a great start, so that in early July it was very promising; but at harvest it was found by measurement to have added nothing to the

grain, or from appearances to the stalks. One-half of the field had the super-phosphate applied, the other half did not have it.

As to guano, he says in a wet season it did great good, but that in a dry season it did injury.

The ashes made from wood burned in the manufacture of salt at Syracuse had considerable salt and much of the impurities, such as sulphate of lime, that are taken from the water, mixed among them, In all, 25 or 30 acres of land have had these ashes applied, at the rate of about 50 bushels to the acre. This is but a very small part of the whole farm, so that in truth farm-made manure has done the work. Purchased manures have only had their value tested, and excepting gypsum, have really performed no other part than to show either their worthlessness or that they cost too much. Gypsum has, as in many other places, proved its great value in increasing the growth of clover; and the time has come when it is thought to give too much rankness to clover on this farm to make first-rate hay for sheep.

SHEEP AS MANUFACTURERS OF MANURE.

The Spanish proverb that says that where the sheep treads he produces gold, has been acted upon, and proven to be true, by Mr. Chamberlain. He has fed the produce of his farm principally to sheep, selling the increase and the wool and the mutton produced, rather than the food that produced it. The sheep have, in the strictest use of language, been used as machines to manufacture grain, hay, corn-stalks, straw, swamp-muck, leaves and weeds into material to recuperate his once exhausted and worn-out farm; and the system has been followed with an unwavering tenacity, until the result has been fully secured, and the time has come when a large surplus is produced that, when the market is high, finds its way to it.

How Mr. Chamberlain came to know that sheep were, of all animals, by far the best adapted to carry out his determination to recreate this farm, I do not know; but, in some way, he found this out at a very early day.

In the first years he was forced to use the common sheep of this country; but, desirous to have something better, he employed what was, and still is, supposed to have been a competent person to select a flock of sheep in Spain, and imported in 1849 from Estremadura, forty in number. These sheep, though every effort had been made to procure the best, did not give satisfaction, and after trial, were condemned and sent to the butcher. This satisfied Mr. Cham-

berlain that Spain, though the original home of the Merino, was no longer the place from which to procure the basis of a first-rate flock of fine-wooled sheep. He then visited Europe in person, and made a thorough examination of the best flocks in the great wool-producing countries; visiting, among others, the royal flocks of the Kingdom of Naples. In Calabria he studied the management of the flocks of Merinoes that King Bomba had cared for, as one of the important matters of State. In one place he saw 600 lambs, none of them two days old. From this, some idea may be formed of the vastness of the flocks. He also visited the Merino flocks of France and Prussia, purchasing some in both countries.

From time to time further importations have been made of sheep selected from what Mr. Chamberlain believes to be the best flocks in Europe. The French sheep have all been disposed of, and the flock now consists entirely of sheep that have, by common consent, received the name of Silesians.

I shall not attempt, at this time, any minute description of this somewhat famous flock of sheep, nor go into the detail of the management. It must suffice for me to say that the earlier importations were a cross between the Infantado and Negretti families, with pedigrees that had been carefully kept, and reached back to Spain, whence they were imported in 1811, and before the destruction of the Spanish flocks had been completed by contending armies. Two hundred and forty-six sheep were imported by 1856, all coming from two flocks that had the same origin. Other importations have been made—one the last year. The later importations have all been pure and unmixed Negretti, Mr. Chamberlain's matured judgment leading him to give the preference to this branch of the Merino family over all others.

During the season of grass, the sheep are turned into the pastures after the grass has become dry in the morning, and before much dew has fallen at night they are brought into the yards. Of course they are housed during all storms, and are under cover during night time.

The flock is under the immediate charge and management of Mr. Carl Heyne, who was regularly trained and educated as a shepherd in Silesia, his native country. Very likely Mr. Heyne has no superior as a flock master on this continent or any other. Mr. Chamberlain has so much confidence in this shepherd's judgment, that he has several times sent him to Germany to select and bring out sheep. The best proof of great skill in management is the flock itself. No diseases have ever attacked it, and the sheep live to a

great age, preserving health and vigor beyond anything that has elsewhere come under my notice. I have seen in February more than 100 lambs, from a few hours to six weeks old, in a single sheep-house with their mothers. None had died from the whole number, except one unfortunate who happened to have some deformity, for which he had been killed, as not suitable to raise. The death of a lamb is a very rare event under Mr. Heyne's management, and one of the largest and best formed sheep I have seen in the flock was yeaned by a mother 13 years old.

At night the sheep are fed hay and straw, and again in the morning. Straw, or other litter, is always on the floors of the sheep-houses in sufficient quantities to absorb all the manure, and is by the sheep itself converted into manure.

This system of feeding dry food at night, has the advantage of promoting health, and, as all experienced feeders of farm stock know, it suits the appetite of the animals, especially when grass is fresh—and the great point of working straw, leaves, weeds, and all the refuse stuff into manure, is satisfactorily accomplished. Much pasture is saved by allowing the grass to grow undisturbed during so great a portion of the time; and thus one of the important points of soiling is, at least in part, gained.

By this system 15 acres of pasture is made to carry 300 sheep, until after wheat, &c., has been harvested.

Mr. Chamberlain is a believer in deep ploughing, and often renews his grass—seldom allowing a piece of land to be pastured more than three years from the seeding; and whenever a piece of land is put into a crop, it is intended to put on it manure, so as to improve it.

LIME.

In 1853, twenty acres of this farm was treated to lime, at the rate of 50 bushels to the acre, applied in the Spring on inverted sod. The first crop was not improved, but ever since the land has been better; but Mr. C. says the cost was too great for the benefit received.

To sum up all his experience—Mr. Chamberlain says that rather than purchase special manures, except gypsum, and he had no muck on his farm, he would go to the road sides and pare off the turf and compost it with his barn-yard manure. In regard to swamp muck, he says that so much as comes from near the surface, only requires to dry and have the sun of one Summer, while that which is dug from some considerable depth should be composted with yard manure.

In regard to housing the sheep at night, the question may be asked, Is not this too much trouble, and does it not cost too much? Having observed this management for some years, I am ready to say that, all things taken into account, there is no system whatever that gives so satisfactory results, and that really pays so well. To give my reasons for this opinion would require too much space to be taken now.

The plan of having the lambs yeaned during December, January and February, may not meet the approval of all flock managers, but Mr. Heyne has his reasons, and to my mind they are abundantly sufficient to sustain the wisdom of his methods.

I have now made the way clear to state the

RESULT OF MR. CHAMBERLAIN'S SYSTEM OF FARMING.

Wheat is yet an uncertain crop, but 800 bushels have been produced in a single crop on 20 acres of land—an average of 40 bushels to the acre; but this was his *fortunate* crop, and is the exception.

Let us take the year 1866. This year he cut 800 loads of hay, which he and his men believe would weigh 600 tons. Had his whole cultivated land been in one grand meadow, consisting of about 376 acres, he would have cut one ton and six-tenths to the acre, which is much above the average yield of the meadows of this State. But his farm was not all meadow. He had that year about 40 acres of Indian corn, that was estimated to yield about 50 bushels to the acre. He had 30 acres of wheat, that gave 15 bushels to the acre; 30 acres of oats and eight acres of roots; and he summered over 300 sheep.

Making reasonable allowances for land used for orchards, gardens, yards and buildings—the particulars in regard to which I have not obtained—we shall find that the productions of this once worn-out farm have, by skillful management, been raised to a standard that would probably satisfy a farmer of the famed Scotia Valley in Ohio.

The stock carried through last winter was 300 sheep purchased for feeding. They paid $1 each of profit over and above the market value of the feed, and left their pile of manure in addition. He also fed 35 steers, three and four years old, and 12 oxen, and also wintered his flock of Silesians, 300 in number, his teams, young cattle and cows.

CONCLUDING REMARKS.

I think I have now fulfilled a promise made in a former article,

by showing how an old worn-out farm has been made to bring itself to more than its pristine fertility. I have used an example to show the force and truth of Mr. Failes' position taken in his address.

Mr. Chamberlain has fairly conquered his position, so that the words "*fancy farmer*" are probably no longer applied to him, by even the most inveterate followers of ancient routine that the town of Red Hook can now show. They see the once miry swamp now thoroughly drained and solid ground, bearing the weight of heavy crops of grass or grain, and the sandy uplands fruitful as a garden. But has all this paid? Yes, whether we consider the investment as one merely looking to a return of seven per cent. on cost, or in the great pleasure such a victory must give. It pays again in the enhanced value given the farm, if we consider it a thing to be some day sold.

The example that I have thus held up for farmers is of a value that I shall not attempt to compute. The personal gratification that this man has a right to feel can be imagined. He who once sent out his fleets of thirty vessels to gather or distribute the merchandise of the ends of the earth, now in a green old age contemplates the work of his hands as a farmer with a serenity, and discourses of it to those who, though to the "manner born," come around him for advice with a modesty that becomes greatness.—*Fairmount, N. Y., June* 7, 1869.—*New York Tribune.*

A Steam Plough,

The steam plough and accompanying apparatus, imported by Col. Wm. E. Patterson, from Leeds, England, was put in operation on Tuesday last, on the recent purchase of that gentleman at Atsion, New Jersey.

Col. Patterson's large tract of land in that locality is to be devoted to the culture of sugar beet. As the soil is a sandy loam, closely akin to that in which the French have been so successful in the sugar beet culture, Col. Patterson sees no reason why a profit cannot be realized in this country in the same direction.

The test of this steam plough was made in the presence of a considerable congregation of people, including Gen. Capron of the United States Agricultural Bureau at Washington.

The machinery is by no means complicated. At opposite sites of the space to be ploughed are two steam engines upon wheels. On the trial on Tuesday they stood three hundred yards apart. The

plough has six shares. It is a distinct piece of mechanism, and is fastened to a steel wire cable extending between the two locomotives across the ground to be turned over. It is literally a shuttlecock between two steam battledores. It moves at the speed of a hundred yards a minute, turning six furrows a foot each in width, and eight inches in depth. Its average work, therefore, is twenty acres per day. The locomotives are snug machines, capable of being applied to many useful purposes independent of duty as steam-ploughers.

A man rides on the plough as it crosses the soil.

A digging machine accompanies the plough, intended for use in soils where roots and stones are obstacles to the course of the ploughshare. This is a wonderful apparatus. It so triturates the stiffest soil that a Yankee might put it into bladders and vend it as a substitute for snuff.

To work it costs extremely little. Anything answers as fuel, and at the rate of twenty acres per day a large estate is soon put under cultivation. The locomotives are, then, ready for ordinary duty as steam engines, either to grind or thresh, saw or mash.—*Philadelphia North American.*

Straight and Crooked Streams.

"When doctors disagree, who shall decide?"

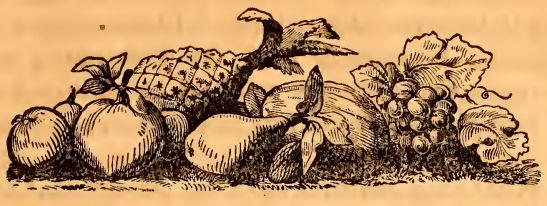
Messrs. Editors,—Having been interested with the perusal of the recent discussion in the *Southern Planter and Farmer*, relative to the merits of straight and crooked streams, suffer me to make a few remarks relative thereto.

The question at issue is, are not the small streams, in their original state, governed by the same natural laws as are the rivers? If so, crooked streams are in accordance with the general laws of nature. This position has not been disproved, nor indeed can it be. Art has been called to the assistance of nature as applied to this subject, but with what effect let the present state of our bottom lands testify. Facts are stubborn things, and cannot be invalidated by either preconceived opinions or theoretical disquisitions.

Respectfully, R. W.

Prince Edward Co., June 22, 1869.

Some one estimates, we do not know from what data, that there are 37,000,000 hogs in the United States.



Horticultural Department.

JOHN M. ALLAN, - - - - - - - EDITOR.

Strawberry Exhibition of the Horticultural and Pomological Society.

We append the report of the Committee of Examination, upon the strawberries exhibited on the 27th of May at St. Alban's Hall. As we said in our last issue, the exhibition was a complete success, and the Society, as well as the public, are under obligations to the committee under whose care it was gotten up and so successfully conducted; and without detracting from the merit of the other gentlemen upon the committee, it is but just to mention Messrs. Chamberlain, Stansberry and Morton as prominently and especially active in its arrangement and management. A speech from Major Sutherlin, practical and useful as his speeches always are, and excellent music, added to the pleasure of the evening.

As will be seen by reference to another page, there is some diversity of opinion concerning the correctness of the conclusions arrived at by the Committee of Examination, as to the merits of various varieties; but it must be borne in mind that the committee could only judge by appearances which are often deceptive, and thus they may have erred in some respects, such as the fitness for shipping, the general usefulness, and kindred matters, which cannot well be determined save by experience in growing. Then again, tastes differ so, that it is hard to decide so as to suit every one concerning flavor. As proof of this, we once heard a grower (never but one, it is true,) say that the Wilson was a good flavored berry. So, after all, each one must decide for himself what best suits, and the experience of our correspondent and the report of the committee will both be useful in directing our readers:

The Committee of Examination of Fruits and Flowers, appointed on the 24th instant by the Executive Committee of the Horticultural and Pomological Society of Virginia, met at St. Alban's Hall on Thursday evening, the 27th of May, for the inspection more es-

pecially of the many varieties of strawberries that the now numerous growers in the immediate vicinity of Richmond had been solicited to exhibit. In entering upon the discharge of the duties assigned to it, the committee was animated by an earnest desire to do full and impartial justice to every exhibitor on so interesting an occasion.

Previous to the examination it had been decided that the report should embrace the following points, viz.:

First.—Best shipping berries.

Second.—Best berries for home market.

Third.—Best flavored berries.

Fourth.—Best berries for family use.

Fifth.—Largest berries.

Sixth.—Best berries combining all, or the largest number, of these qualities.

Seventh.—Best collection of berries exhibited.

In reply to the first inquiry, the committee decided upon the Wilson's Albany, the Triomphe de Gand, and Russell's Prolific.

To the second.—Same as above.

To the third.—Golden Queen, Empress Eugenie, and Lenning's White.

To the fourth.—Wilson's Albany, Empress Eugenie, Golden Queen, Lenning's White, and Napoleon.

To the 5th.—Wilson's Albany and Golden Queen.

To the sixth.—Wilson's Albany.

The largest collections, and embracing the greatest varieties and of fine quality, were exhibited by Messrs. Franklin Davis & Co. and Messrs. Allan & Johnson—the former furnishing no less than eighteen, and the latter twelve, most of them of the most approved kinds, and all having their peculiar merits. The "Napoleon," furnished by the latter firm, was a splendid berry. Mr. J. E. Stansberry exhibited a seedling bearing his name, a fine berry, and represented as very prolific; some fine specimens of the "Hovey Cross" and "McEvoy Superior"; likewise a beautiful vine known as the "Alpine," growing very erect, bearing small but beautiful scarlet berries, and in every stage of growth from bloom to maturity.

Mr. L. Chamberlain exhibited a small but very showy collection, numbering among them the "Golden Queen," a beautiful berry and of delicious flavor. The attention of the committee was especially called to the collection of Mr. William M. Ledley, through the agency of his gardener, Mr. W. J. Hendrick, who exhibited some splendid specimens of "Wilson's Albany," "Russell's

Prolific," and "Jucunda." There was also a remarkably fine specimen exhibited by Mr. W. L. Harrison, of Henrico, no name, but very large and sweet. Mr. W. W. Turner also furnished a box containing a very agreeable arrangement of flowers, interspersed with some gigantic specimens of "Russell's Prolific," "Agriculturist," a variety called "Philadelphia," and some very large "Jucunda." The collection of "Wilson's Albany," exhibited by Mr. A. M. Morris, was remarkably fine—equal, we think, to Mr. Ledley's. The same may be said of those furnished by Mr. William Coulling. Mr. J. W. Lewellen presented a specimen of "Russell's Prolific" —very large in size and fine flavor. Mr. Channing Robinson, a curious variety called "Lady's Finger"—sweet and of an agreeable flavor. Late in the evening Dr. J. G. Beattie sent in some very fine specimens of "Russell" and "Agriculturist." Many of the berries were so large that it seemed as if three or four were rolled into one.

To Messrs. Allan & Johnson, and Mr. John Morton, the Society is much indebted for the rare and beautiful display of greenhouse plants and flowers, which added so much to the embellishment of the hall. And we cannot let the occasion pass without returning the thanks of the Society to Miss Isabella Webb for the beautiful bouquet, as large as an ordinary-sized centre-table; and the very many sent by Mrs. Judge Clopton, of Manchester, embracing every variety of the most beautiful flowers we have ever seen at this season of the year.

The exhibition was a complete success, and we cannot close this report without tendering our congratulations to the President and members of the Society under whose auspices it was gotten up.

WILLIAM H. HAXALL, Chairman;
I. S. TOWER,
S. P. MOORE,
C. B. WILLIAMS,
J. C. SHIELDS,
J. P. BROCK,
H. K. ELLYSON,
JOSEPH R. RENNIE.

THE Hartford Prolific Grape does better on clay than on sandy and gravelly soils. The great objection to this grape is its tendency to drop its berries as soon as they are ripe. On clay land, it retains the berries better than on light, warm soils.

Raspberries.

The difficulty in the Northern States is to get a variety of raspberry that will stand the winter; here it is to get one that will endure the summer. This season has only increased the record of failures. Notwithstanding the fact that we have had a more than usually cool and moist spring and summer, yet we have had no success with any of the red raspberries except the Philadelphia, and only partial with that variety. All save the Philadelphia died before maturing; and while that matured a good proportion of its fruit, still it was by no means prolific. Its flavor, however, we think is decidedly better here than farther North. The Clarke was not fairly tested, and we still hope it will prove useful.

The Black Caps succeed admirably, bear enormously, ripen well, and are highly flavored. It will be prudent for our growers to rely mainly upon these, at least until the Philadelphia and Clarke have been more fully tested.

Why do not our fruit growers give us more raspberries? There were none in market this season, and yet the Black Caps are well adapted to this climate, and are prolific enough to be very profitable.

Strawberries.

Messrs. Editors,—For the last two years I have been giving you the results of my experiments with leading varieties of strawberries, and hope a continuation may not be unprofitable.

Last year the varieties under culture were Wilson, Hovey, Russell, Jucunda, Triomphe de Gand, Peabody, Agriculturist, and Napoleon; this year the same, with Austin, Hooker, Early Scarlet, and Empress Eugenie added (the latter a new variety originated by Mr. Lemosy, near Portsmouth, Va.) They ripened in the following order, commencing May 17th: Early Scarlet, Russell, Hooker, Wilson, Agriculturist, Peabody, Hovey, Triomphe de Gand, Empress Eugenie, Jucunda, Austin, Napoleon, the last not maturing until June 1st. In size the order was as follows: Empress Eugenie, Russell, Jucunda, Agriculturist, Austin, Wilson, Napoleon, Triomphe de Gand, Hovey, Peabody, Hooker, Early Scarlet. In yield: Russell, Empress Eugenie, Wilson, Agriculturist, Triomphe de Gand, Napoleon, Jucunda, Austin, Hovey, Peabody, Hooker, Early Scarlet. In flavor: Russell, Triomphe de Gand, Agriculturist, Hovey, Peabody, Early Scarlet, Napoleon, Jucunda, Empress Eugenie, Hooker, Austin, Wilson. In firmness and other

shipping qualities, I found the following to be the only useful ones, and they ranked in the order they are stated: Wilson, Russell, Napoleon. For all purposes, save shipping, the Russell has again proven itself to be by far the best variety, and it bears transportation very well, though it is not equal to the Wilson in this respect. This season it ripened several days before the Wilson, and during the entire season commanded higher prices. The Empress Eugenie proved to be a very large, handsome and prolific berry, but not highly flavored. The Jucunda did well, but ripening, as it does, at the middle of the season, is valueless as a market berry. The Austin and Napoleon are both valuable because of their late maturity; the latter is very prolific and well flavored; both are large sized.

If I may be permitted to differ with the committee of the Horticultural and Pomological Society, I would say for the best early shipping berries, take Wilson and Russell. For home market, Russell, Empress Eugenie, Triomphe de Gand, Agriculturist, and Napoleon. For best flavored, Russell, Triomphe de Gand, Agriculturist, and Hovey. For family use, Russell, Empress Eugenie, Jucunda, and Napoleon. For largest berries, Russell and Empress Eugenie. For the most generally useful variety, Russell. All of the above rank in the order they are named. Empress Eugenie and Golden Queen are claimed by some to be synonymous. I do not think they are the same, but they very closely resemble each other, and all that I have said of the one is true of the other, with a slight advantage, in size, in favor of the Golden Queen. How the Triomphe de Gand can be put down as good for shipping purposes is a mystery to me. Of all soft berries, it is the softest; and though highly flavored, of good size, and moderately prolific, it will hardly bear transportation beyond the spot where grown. "M."

Guano.—Some experienced cultivators have given us instances of the use of guano on fruit trees with beneficial results. Although the trees seemed to wither up and become sickly looking the first year, nevertheless the second year they grew so fresh and green and luxuriant as to astonish their owners.

We have seen guano water applied to grape vines, causing them to wither up, as it were, with intense heat, the first year, but the second year exceeding all former years in beauty and fruitfulness. Guano should never be brought directly in contact with seeds or the roots of trees or plants. It should always be mixed with about six times its weight of finely sifted soil or loam.—*Horticulturist.*

Harvesting the Navy Bean and Gathering the Potato Crop.

Messrs. Editors,—In yours of June, inquiry is made as to the best mode of harvesting the navy bean. When ripe, and when the vines are dry, (that is, when the dew or rain has left them,) pull by hand, and place in heaps; turn the heaps not oftener than once a day, till the vines are dry, and then thresh them either by hand or power. In carrying them from the field to be threshed, use a tight hay wagon or cart, for in loading they will shell out. I don't advise to stow them away to be threshed at some future time, but finish the job at once.

There is no better plan of gathering the "Irish" potato than by digging them with a five-prong potato fork. By gathering the crop with the fork the work is done better and the ground is also benefitted. More and better work can be done by two men with the "forks," than three can accomplish by the "hoe."

Respectfully yours, WM. H. S.

Philadelphia, June 19, 1869.

HOW TO PRESERVE MELONS FROM THE STRIPED BUG:

The practice of the "Long Island" melon growers to preserve their melons, &c., from the striped melon bug, is to sow through a fine sieve, ground plaster or gypsum on the plants, so soon as they are above ground, early in the morning while the dew is on the plants—such plaster forming a crust through which the bug will not eat. Two applications are generally enough to preserve the crop. *It has never failed*, at least for twenty-seven years, to my personal knowledge. Tobacco dust, ashes, &c., have failed.

Respectfully yours, WM. H. S.

Philadelphia, June 19, 1869.

[We thank our correspondent for the above communications, and hope he will favor us with frequent opportunities of enlightening our readers in regard to such interesting matters of inquiry as can be satisfactorily answered only by such persons as have gained a store of practical knowledge through their own experience and observation.—EDS. S. P. & F.]

BEETS.—To raise beets with best success, sow the Early Bassano in drills eighteen inches wide; thin out to one foot apart. Top-dress the ground with Peruvian guano, and you will have prime beets fit to pull in seventy days.—*Horticulturist.*

Nut Culture.

Messrs. Editors,—I promised to give you some account of my progress in the cultivation of nuts, which I am now prepared to do. As I stated before, I obtained my principal supply of nuts for planting from A. F. Cochran, Esq., importer of fruits and nuts, New Orleans. This gentleman furnishes nuts at cost of importation to all who wish to plant. The rest I obtained from J. M. Thorburn, No. 15 John street, New York. The following varieties vegetated freely, and are growing as vigorously as Indian corn:

Spanish chesnuts (*Castanea vesca*).

English walnuts (*Juglans regia*).

Pecans (*Carya olivæformis*).

Italian pines (*Pinus pinua*).

Jujube (*Zizyphus sativa*)—not a nut, but a very valuable fruit tree.

The following varieties failed to vegetate:

Filberts (*Corylus avellana*). Of this, however, I obtained plants from the nursery of P. J. Berckman, Augusta, and they are growing finely.

Pistachio nut (*Pistachia vera*).

Salisburia (*Ginkgo biloba*). I give this name according to Mr. Thorburn's spelling; other nurserymen give it differently. It is a valuable nut tree.

So out of the eight varieties of tree seeds planted, only three failed to vegetate. These three are constantly grown from seed by our nurserymen, and why they failed in my hands I cannot tell. They are worth another trial, however.

Few persons are aware of the value of nuts as an article of food. The idea that they are unwholesome is as absurd as the now exploded opinion that grapes and peaches were unwholesome. All food-stuffs are divided by chemists into two great classes, viz: albuminous substances, which contain 15 per cent of nitrogen, and are called "flesh-formers;" and amyloids and fats, which are called "heat-producers," and contain no nitrogen. The necessity, therefore, of constantly renewing the supply of albumen arises from the circumstance that the loss of nitrogen (in the secretion of urea from the body,) is going on constantly, whether the body is fed or not; and there is only one form in which nitrogen can be taken into the blood, and that is in the form of a solution of protein, or albumen. Albumen, which may be taken as the type of the proteids, contains 15 per cent. of nitrogen, and the moment this sub-

stance is withdrawn from the food, man begins to suffer from what may be called *nitrogen starvation*, and, sooner or later, will die. Now let us compare the three classes of human food—herb, tree, and flesh foods—and see which contains the largest quantity of this valuable substance, albumen. Of each class, we will take the article most used on our tables—beef as the representative of flesh food, wheat as the representative of herb food, and almonds as the most generally used tree food, and as the representative of nuts:

	Water.	Albumen.
Beef, - - -	74	20
Odessa wheat, - -	12	15
Sweet almonds, - -	3	24

The figures are obtained from Webster's American Family Encyclopædia, and it will be observed that almonds contain a larger quantity of nitrogenous matter than either beef or wheat. All nuts consist largely of albumen; and when we recollect that man, in his unfallen condition, lived entirely upon the fruit of trees, it seems that both science and revelation point to the fruit of trees as his natural food.

Not only so, but the soil constantly grows richer under tree culture, and poorer under herb culture. (We use the term *herb*, because every plant which has not a hard woody stem, comes under this designation.) Trees also purify the atmosphere and beautify the landscape. It is an actual, and very significant fact, that where ever a country becomes denuded of trees, man's physical, mental and political power decays. Witness Spain, Italy, Greece, and Syria. They have each in their turn, stood first in power, prosperity, and civilization. But they each swept their beautiful fruit-bearing trees from the face of the earth, and each, like Samson, shorn of his locks, lost their strength. To destroy fruit-bearing trees is in direct disobedience to the divine command; "for," says Holy Writ, "the tree of the field is man's life." Phosphorus feeds the brain, and phosphorus, as food, is only found in albumen, and albumen, in its purest state, and in most abundance, is found in the fruit of trees. So says science; and the Bible confirms the teachings of science, by informing us that the food of Eden was only the fruit of trees. Where, in modern times, was such a brain formed as that of the first Napoleon, who grew up amidst the chesnut groves of Corsica? The chesnut is to the Corsicans what the potato is to the Irish. Their name for it signifies "bread tree." A recent writer in the *Atlantic Monthly* describes a visit to Corsica,

the "Land of Paoli," and says: "Our companion, the prefect, pointed to the chesnut groves. 'There,' said he, 'is the main support of our people in the winter. Our Corsican name for it is the 'bread tree.' The nuts are ground, and the cakes of chesnut flour, baked on the hearth, are really delicious. We could not live without the chesnut and the olive.'" The chesnut, as well as the walnut, pecan and other nut trees, fully answers the description of the trees of Eden, which were not only good for food, but pleasant to the sight. No trees on earth are more beautiful than these massive nut-bearing trees. In form, foliage, and trunk, they stand first for beauty, amongst park and pleasure-ground trees. Whilst taking a drive recently, I was struck with the majestic beauty and dark luxuriant foliage of a group of trees in the distance. On coming nearer, I found they were shell-bark hickory, from around which the other forest trees had been cut away, allowing them full room to develope their grand proportions. The nut is one of the most delicious known, superior, in my estimation, to the pecan, and the shell is thin enough to yield readily to the nut-crackers. The present Emperor of the French, whose practice of rural economy surpasses all of Bousingault's theories, has had millions of chesnuts planted in Algeria, with the object of improving that country. It must be borne in mind that the European chesnut is a much larger and more valuable nut than ours, and does not seem to suffer from the disease which is sweeping ours from our forests. When the nuts are fresh, they grow as easily as black-eyed peas. What the chesnut is to the Corsicans, the English walnut (so-called) is to the Persians—an article of every day diet. Is it the oil and albumen of this nut which make them the most war-like, intellectual, and handsome of Asiatics? Compare the fine features and athletic, graceful figures of the nut-eating Persians with the square, squat, hideous forms of the rice-eating Chinamen, and say if diet has not something to do with the difference.

Lastly, nut and other fruit trees yield a larger amount of food to the acre than any other crops whatever. This can be proved by figures, which never lie, notwithstanding the stupidly jocose assertion that they do. Pecans will fruit anywhere south of the Potomac, and when situated in deep, alluvial soils, will commence bearing in four or five years. There are many varieties, some superior to others, but all are delicious, and indigenous to America. They are said to bring a higher price in the European market than any other nut. Let them become to us what the chesnut is to the Corsican, the walnut to the Persian, the sweet acorn to the ancient Greek.

Must a Berry Box or Basket have Sloping Sides?

Much valuable information is contained in an article of the April number of the *Horticulturist*, entitled "Additional Hints," etc. But I think the writer was much too sweeping in his condemnation of all berry boxes but those with sloping and ventilated sides. The fruit-growers in this neighborhood have used for two years, a square box with strait sides and ventilated *bottom*, and have sent it in the same shipments with the sloping baskets, to the same markets, with equal success. And said box being only one-third the price, and so arranged in the crate as to present the fruit in market in heaped-up measure after the shaking of transportation, has run the sloping-sided basket out of this market.

As it is customary now in our Western cities to give the box, when the berries are sold, it makes a great difference in the cost of shipping whether a one-cent box or a three-cent basket be given away.

There are two reasons why baskets and boxes are not sent back to the shipper. First, the dealers find it a very perplexing matter to gather and return each box to its proper owner. Second, berries should be shipped in a new, clean box, as a second using involves a greater or less degree of impurity and uncleanliness.

It is not true that expensive baskets always insure the best prices, as it depends on the manner of picking and putting in boxes and crates.

Such is the experience of myself and neighbors who have tried sloping-sided baskets and the boxes above referred to.—A. J. Moore, *in Horticulturist.*

Pruning Tomatoes.—It is stated that gardeners in France cut off the stem of the tomato plants down to the first cluster of flowers which appears on them, thus impelling the sap into the buds below the cluster, which pushes up vigorously, producing another cluster of flowers. "When these are visible, the branch to which they belong is also topped down to their level; and this is done five times successively. By this means the plants become stout dwarf bushes, not over eighteen inches high. In order to prevent them from falling over, sticks or strings are stretched horizontally along the rows, so as to keep the plants erect. In addition to this, all the laterals that have no flowers whatsoever, are nipped off. In this way the ripe sap is directed into the fruit, which acquires beauty, size, and excellence, unattainable by other means."—*Horticulturist.*

Household Department.

Alsike Clover for Bee Pasturage.

Early in the year 1868, I was induced by an article I saw in the "Bee Journal," to try the Alsike clover for my bees. I accordingly purchased a pound of the seed, which I sowed upon a small piece of land, (about one-quarter of an acre,) though too much seed for the quantity of land. It germinated well, and like the red clover, only made a good stand; but this spring (1869.) it came up well, and now, the 16th of June, it will stand, if erect, 20 to 30 inches high, and is covered with blooms and bees; indeed, I have rarely seen bees more numerous on buckwheat blooms than on this clover. I shall sow a lot of buckwheat for fall pasturage; but for May and June, I think the Alsike clover furnishes more food than any plant I have ever seen. When not too cool or rainy for them to be out, you will find the patch covered with bees pretty well all day, and at times almost in swarms. They have sent forth a goodly number of swarms, and filled the bodies of the hives well with store honey, and I hope will yield a good surplus. I shall sow this fall another lot much larger than the one I now have, reserving that till the other is sufficiently advanced to afford them food—and as long as I am able to procure seed to sow—shall do so to keep up a succession; besides, it yields an abundant crop of hay—not so much as the red clover, but the sweets furnished the bees more than make up any difference. The bloom is like that of the white clover—folding back in such a way as to enable the bees to get into every part of it—while on the red clover coming up in the same patch, you never see one. M. G. F.

Henrico county, Va.

Yellow Wash for Buildings.

Dissolve 1 pound of pulverized copperas in 8 gallons of water; let it stand for 24 hours, stirring two or three times from the bottom. Use this for slaking the lime and thinning it to the consistency of ordinary whitewash; add hydraulic cement equal in quantity to the lime used, and there may also be added, with advantage, ½ gallon of clean fine sand to every 15 gallons of the wash. While using, stir frequently, to prevent sand from settling.

The walls or buildings should be first well cleaned of dust, and thoroughly wet with the rose of a watering pot, and the wash applied immediately after, beginning at top, laying the coat on horizontally, and finishing vertically.

Before leaving the work at any time, finish the course to a point in the wall, to prevent leaving a mark where the two courses join on a renewal of the work.

This wash is stated to have lasted for fifteen years without requiring renewal.

For a gray or stone color, add to above lamp black, previously deadened with whiskey.

A wise son maketh a glad father; but a foolish man despiseth his mother.

THE SOUTHERN PLANTER AND FARMER.

RICHMOND, VIRGINIA., ... JULY 1869.

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Editorial Department.

The Great Reaper and Mower Trial at Westover.

We had hoped to be able to lay before our readers at this time a circumstantial and full account of the great trial of Reapers and Mowers which came off at Westover, the residence of A. H. Drewry, Esq., on the 9th ultimo, but uncontrollable circumstances have conspired to defeat our expectation. We have to rely upon general report for the materials of the brief notice we are about to give below.

It is universally conceded by all who were present that it was a grand affair, and the performance of the large number of machines exhibited in operation on the field of trial was fully equal, if not beyond, public expectation, and every way worthy of the occasion.

These machines were generally, if not all of them, gotten up in a finished style of workmanship, and being the best specimens selected from the number and variety in use in the North and West, presented an array of excellence which challenged general admiration. McCormick's Reaper was not entered, nor was it on the ground.

The committee of adjudication carefully tested the machines in operation by the standard prescribed by the Executive Committee of the State Agricultural Society, under whose auspices the trial was conducted, noting the merits of each machine in relation to every specification on the scale of points, so that, in summing up the points of excellence exhibited by each machine, the relative merits of all might be determined by comparison, and the awards rendered in favor of those standing the highest on the standard or scale of points. The awards of the judges will not be made known, we understand, until the close of the State Fair in November next, at which time they will be announced and published, in connection with the awards of premiums on the various other subjects comprised in the schedule of premiums offered by the Society.

The munificent and princely hospitality of Mr. Drewry manifested in his bountiful and abundant preparations for the entertainment and social enjoyment of the officers of the Society, the exhibitors, and numerous visitors, is above all praise. We will not farther trench upon the prerogative of those

whose grateful duty and pleasure it will be to do justice to the claims of such uncalculating beneficence upon the gratitude and admiration of all who shared in his noble generosity, on an occasion so important in its relations to the progress and development of the industrial interests of Virginia.

Correspondence of the Southern Planter and Farmer.

Dear Sirs,—I enclose $2 for the renewal of my subscription to the *Planter and Farmer.*

What of lucerne, and why are there not more instances of its cultivation in our midst? In writings on English husbandry more than a hundred years ago, its large yield of hay, its nutritious qualities, and the high relish of it by stock, are always recognized; and at the present day we know it to be a leading favorite in France and other portions of Europe. Impressed by representations of its superiority over other grasses as green forage, on account of the number of cuttings it affords, and, unlike clover, of its not salivating stock at any period of its growth, I am growing it on a somewhat extensive scale, with the purpose, if my hopes of it are realized, of extending the cultivation. But if more recent experience has shown that there are more valuable grasses, or, what I in some degree fear, that there is a too great difficulty in its successful management, I would like to know it, as in either case, I might stay the further increase of its surface. My hopes of it, in opposition to the (to me) unknown grounds of the omission by others to cultivate it, rest on the inclination to believe that this omission—this implied rejection of it—may be owing to a defect in its cultivation; that it requires the land to be better cleansed before it is planted, or that it should be more carefully freed of weeds and other pests in the earlier stages of its growth, than is in most cases observed. I recently came across an old volume of a work published in London in the year 1728, with a long title embracing "all sorts of country affairs," in which, in addition to its mertis as a hay crop, it is commended as an improver of "dry and barren land." And certainly, in accordance with the theory of renovating lands by vegetable growths, in bringing, through their roots, the mineral constituents of the subsoil and clay to the surface, on account of its long straight root, the commendation is just. Dr. Thos. P. Atkinson, to whom the readers of the *Planter and Farmer* owe so much for his scientific and practical communications, in a letter of response to enquiries relative to the process of cultivating it, (I had entertained the thought of planting it myself from reading an article by him in the *Planter and Farmer* recommending it for keeping up the borders of a garden,) writes me that he had measured a root of it 14 inches in length. In repeated trials, I have never found a root of less length than a third of that of the stalk. In some instances the root is longer than the stalk.

There is one subject on which I feel qualified to speak by the "card," and that is, the value of tobacco stalks on certain garden vegetables. I have growing in my garden a square of cabbages of unsurpassed luxuriance, and a square of potatoes surpassing in yield any instance within my experience, both manured with this material. I have used them on cabbages for several years with unvaried success. The potatoes are planted in hills three feet apart —a whole potato of good size with a double handful of stalks above it, at the bottom of the hill. I more than incline to think that their efficacy on this crop,

when thus applied, is owing, in part, to their mechanical action on the soil; that the cavities in their midst filled, when filled at all, with loose earth, afford room for the potato to grow; and further, that the soft pulpy consistence to which they are reduced by the time the potato is formed, yields to its pressure to enlarge itself. I know not why they should not be a valuable manure on other vegetables, and it is my intention hereafter to use them on all. It is customary to spread them broadcast as a preparation for tobacco, in which case they are so scattered, often imperfectly covered by the plough, that their virtue as a manure must in a measure be lost; whereas, when placed in a compact mass in the trenched furrows on which most vegetables are planted, their fertilizing properties will be fully developed and concentrated.

Very respectfully, &c.,

JOHN C. TAYLOR.

Oxford, N. C., June 24, 1969.

Dear Sirs,—I have a lot of red clay land containing two acres, in which I set young apple scions or trees from the nursery of F., D. & Co., in the Fall of 1867. The lot is now very well set in red clover, but the sassafras bushes have grown up so thick (and continue to thicken), that I do not know what to do to destroy them—being a young farmer.

My idea is—the clover being now cut as soon as it starts out pretty well—to sow in two barrels of air slacked lime, and fallow as deeply as I can with two horses, following in their furrow with a coalter furrow, and let it remain so some ten days, and then plough with the "shovel plough" once every week till about the middle or last of August, and then put on say 400 lbs. of the Gallego Company's potato and cabbage fertilizer, (unless you can tell me a better for turnips,) and sow it down in turnip seed, and next year cultivate in shipping tobacco.

My object being to get rid of the sassafras bushes and bring my young trees into bearing as early as possible, I have thought probably the repeated ploughing in the hot dry weather might kill out a great many of the sassafras bushes, and by adding manure and cultivating the land, improve the young trees.

If you will give me your opinion upon what I have written, or suggest any other plan as being better adapted to promote the objects desired, I shall be greatly obliged, &c.

Very respectfully, C.

June 11, 1869.

[W. D Gresham, Esq., published some time since an article containing the following plan for the extirpation of sassafras, which he highly approves: "The remedy which I propose is as follows: in the month of June, when sassafras bushes, roots and briers have obtained their full amount of leaves, and are in a vigorous growth, take a grass scythe and cut them off about two or three inches from the ground. This will cause them to bleed freely, and if an application of from two to three bushels of salt is immediately made, and evenly scattered over them, their eradication may be certainly expected. Salt being injurious to the growing vegetation, it commences its action by an immediate effect upon the sap of the plants."

Mr. W. W. Gilmer prescribes mowing the bushes in May, and grazing closely, as greatly preferable to cultivation.—EDS. S. P. & F.]

To our Debtors.

Accompanying this number of the *Southern Planter and Farmer* will be found a bill for arrears of subscription due by the subscriber to whom the paper is addressed. The tobacco crop has found its way to market, and the proceeds been realized, perhaps, to the extent of two-thirds of the whole, and yet the payments made us out of its proceeds have been scarcely appreciable. The wheat crop will presently be in market. We do earnestly hope our debtors will recognize our claim to share in the distribution of the proceeds of these staple productions. Have we not fulfilled our part of the contract, subsisting between us, without stinginess or parsimony, but, on the contrary, with liberality and in good faith? And will not our debtors atone for past negligence, by a prompt fulfillment of the contract on their part? We have rendered to them the *quid pro;* let them promptly return us the needed *quo.*

The Patrons of Husbandry.

We learn from the *St. Paul's Pioneer*, Minnesota, that an Order of this name was founded and organized by a number of distinguished agriculturists of various States, at Washington, in December, 1867, for the purpose of general improvement in husbandry, to encourage social intercourse in the rural districts, to incite a love for horticulture, and to relieve the tedious monotony of farm life and labor. It is founded upon the idea that the products of the soil comprise the basis of all wealth; that individual happiness depends upon general prosperity, and that the wealth of a country depends upon the general intelligence and mental culture of the producing classes.

They have provided a commodious hall, and fitted it up elegantly, for the purposes of the Order, in which they hold their first meeting on the first of June.

If this Order confines itself strictly to the accomplishment of the ends and objects above set forth, they cannot fail to exert a beneficial influence in "the general improvement of husbandry and in the encouragement of social intercourse in the rural districts."

Periodicals.

The Land We Love and New Eclectic for July. This interesting and instructive magazine comes to us laden, as usual, with the rich fruits of the taste and industry of its able and judicious Editors. Its contents always tend to promote purity, elevation of purpose and refinement of manners, and deserves to be carefully studied by all those who aspire to the possession of these distinctive characteristics. Turnbull & Murdoch, 54 Lexington street, Baltimore. Yearly subscription, $4; single copy, 35 cents.

The Galaxy for July. This is an exceedingly rich number. The article No. II, entitled "Our Impending Chinese Problem," is *the topic* which will arrest the attention of the thoughtful, and lead them to appreciate the fearful effects of the political inventions which have been sought out, ostensibly for

the perpetuation of power in corrupt and wicked hands, but really calculated to bring down their violent doings upon their own heads, and precipitate the downfall and ruin of our country.

Appleton's Journal. We have on our table a full file of this handsome journal, in weekly numbers, and shall carefully preserve and bind them, each quarter. The Messrs. Appleton deserve much credit for publishing such a capital journal at so low a price—10 cents per number, or $4 per annum, in advance. The illustration in the number of July 10th, called "The Country Blacksmith's Shop," is life-like and very familiar to our readers.

Packard's Monthly—The Young Men's Magazine. The July number of this journal is one of the best we have seen. Some of the articles are spicy; all are entertaining; but we are particularly struck with the un-gloved style in which Miss Olive Logan handles modern theatricals, and "The Nude Woman Question." We do not admire Miss Logan, or her Woman's Suffrage doctrines, but she certainly deals the "Black Crook," "White Fawn," and all such, most telling blows, and we trust she will continue to "fight it out on that line, if it takes all summer."

The Richmond and Louisville Medical Journal. The June number of this valuable scientific monthly gives evidence that it is well sustained. Its pages are enriched by the best medical talent of the whole country, and no practicing physician—especially in the South, West, or Southwest—should fail to send $5 to Dr. E. S. Gaillard, Louisville, Ky., and become a subscriber.

Peters' Musical Monthly is a very pleasant monthly visitor, and our lady friends should send for a copy. The new music obtained in twelve numbers should be worth the subscription price—$3 per annum. Address J. L. Peters, publisher, 198 Broadway, New York.

The Reconstructed Farmer. A monthly magazine of 32 pages, published at Tarborough, N. C., by James R. Thigpen and John S. Dancy. It is gotten up very neatly, and is of a prepossessing appearance. It is well filled with selected and original matter adapted to the necessities of the times. We wish for it a career of usefulness and prosperity commensurate with the ability and enterprise with which it is manifestly conducted.

The American Artisan. This useful journal, devoted to the interests of Artisans, Manufacturers, Inventors, &c., after an interval of some weeks, is again restored to its former regularity of appearance on our exchange table. Published by Brown, Combs & Co., 189 Broadway, New York.

Monthly Report of the Department of Agriculture for May and June, 1869.

This interesting cereal contains "a condensed statement of the growing crops, and articles upon Steam Ploughing in New Jersey and Louisiana; Fruit Culture on the Mississippi Rapids; Progress of Nebraska; Value of Sewage Deposits; Land Drainage in California; Wheat Culture in Virginia, &c. * * * Agricultural Exports; Live Stock at Chicago; British Wheat; Imports and British Wool Exports; together with Meteorological Tables and Notes on the weather for the months of April and May, and a variety of Extracts from the Correspondence of the Department," by J. R. Dodge, *Statistician.*

The Manufacturer and Builder is a very handsome quarto of 32 pages, issued monthly in the interest of Manufacturers and Builders, at the low price of $1.50 yearly, or sold by the single copy at 15 cents.