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THE COLONIAL FARMER,

DEVOTED TO THE AGRICULTURAL INTERESTS OF NOVA-SCOTIA, NEW-BRUNSWICK,
AND PRINCE EDWARD'S ISLAND.

OL. 1.

HALIFAX, N. S. DECEMBER, 1841.

NO. 6.

ON MANURES.

When a country advances, in the progress of improvement, from stagnation to tillage, the various sources of manure are investigated and sought after with an avidity commensurate to the fervent spirit of enterprise. The attention, which is paid to this branch of management, indicates with certainty the state of the art; and wherever we discover little or no exertions made in it, in order to accumulate by artificial means the aggregate heap beyond the ordinary supply, no further proof is requisite of the state of debasement in which agriculture lies. On the other hand, when a vigilant and persevering industry is ever on the alert; when numerous expedients are tried to enlarge the quantity as well as to improve the quality of manures; when composts—diversified both in the ingredients and proportions—become objects of curiosity and experiment;—these are the first symptoms of returning life and vigour, and may be hailed as the precursors of more flattering and auspicious prospects. The ardour of agricultural pursuit in England was ushered in by these beginnings: and at the present day, there is no subject of more paramount interest than the augmentation of the dunghill. Every kingdom of nature has been remarkable, to find out substances endowed with the principle of fertility; science has come in to the assistance of art; philosophy has stooped from her dignity, and joined in the general research; and the public interest, instead of having flattered with the very ample success which hitherto has attended the inquiry, has only been roused to more spirited and adventurous efforts. The comports of Lord Meadowbank, the mixture of soil with decomposable matter, the universal application of lime, and the late introduction of burnt clay, are steps in that great race, in which all men, as if stimulated by one common impulse, seem to have engaged. Indeed, unless other means are resorted to, in order to replenish the waste of vegetation, than the simple contents of the barnyard, Great Britain could not sustain the half of her population, nor draw from her own territorial domains that exhaustless abundance which provides the basis for her commerce, and ministers to the necessities, comforts, and luxuries of life. This exuberance of supply may be traced to the improved and skillful methods, not of cultivation, so much as of multiplying the efficacy of putrescible manures. There was a period in her history when, like this Province, she was more “a grazing than a corn country;” and when a butcher’s stall bore no sort of relation in price to wheat and other grain. When we review this part of her history, we are struck with the plausible blunders she once committed, and trace, between them and our own, a striking and remarkable analogy. The manures then in use were the simple excrementitious matter of the cattle on the farm, unaided by those compound ingredients which have been since introduced, and which may be considered in the light of the materials from which the modern stores are manufactured. In truth, without great attention to the artificial increase of this necessary article, our agriculture can never rise to any importance; and it would be vain to urge the extended culture of white crops, unless we possess the means of repairing the exhaustion of the soil.—It has been long acted on in Flanders, and is now universally acknowledged in England, that an arable farm may be kept in good heart, and subjected to a continued course of cropping, without any extraneous dung, other than what is made on the premises on the consumption of green crops, straw, and fodder. The cattle which are fed on turnips, the horses employed in labour, the pigs and poultry are perfectly sufficient to supply such a quantity, under the direction of a scientific manager, as will annually restore to the land that richness of which it is deprived; and at the same time admit the grain to be carried to market, to meet the wants of the community. Every spot, in both countries, can be made to repair its own waste; and the luxuries of one is never employed to correct the poverty of another. Here our rich marshes and inland waters are taxed, and as it were, laid under contribution, for the benefit and support of our uplands.

In the further prosecution of this subject, I shall point out some capital errors in the management of manure, which prevail, with

few exceptions, throughout the whole province, and which have a most pernicious influence on our agricultural progression: and I shall prescribe the remedies which the case suggests, and which are practicable under existing circumstances.

I observe in the first place, that we have almost no pit dug upon a regular plan for the collection and preservation of the dung, which from time to time it wheeled out of the barn. Sometimes it is spread out on the green sward; sometimes cast carelessly in a court, or adjoining yard; but seldom in an excavation made purposely for retaining the juices which run from it. These are suffered either to stream along the surface, or sink into the earth; and in both cases, their utility is sacrificed to inattention and ignorance. This is no more, however, than the half of the evil. The exhalations, which arise from the ardent influence of a summer’s sun, and from the natural activity of fermentation, are permitted to escape freely, and to carry along with them all the strength and substance of the putrescible matter. No means are taken to fix the gases which are generated, and which constitute the elements of vegetable food. I do not know, if there be one solitary instance throughout the whole range of the province, of the application of soil on the surface of a dunghill, to prevent this unpardonable waste and dissipation; and I am too confident, there is none, of lining the bottom with a regular coat or layer, to imbibe the nutritive moisture. The dung, too, is suffered to rot without any attention whatever to the degree of heat; and I should startle my readers, were I to tell them that the fermentation should never be urged beyond 100° of Fahrenheit’s Thermometer. At a much lower heat, carbonic acid, carburetted hydrogen, and the other gases of that family ascend as elastic fluids, and are diffused and lost in the atmosphere. The dunghill becomes what is called *fire-fangen*, and the principles of fertility are expended by the action of those chemical laws, which regulate and pervade the minute and subtle particles of matter.

If the dung be injudiciously treated, the urine discharged by the cattle is squandered, and indeed altogether lost. This is owing to the construction of the barns which generally prevail throughout the province, and which cannot be altered without some little outlay of capital. Being formed of wood, they are mostly raised and propped on a foundation; and a floor of plank is invariably laid.—The whole urine of the cattle except what is absorbed by the dung, finds its way through the seams; and either oozes into the earth, or forms beneath the barn a fetid and noisome pool of standing water. The essential elements of vegetable matter with which it is surcharged, assume quickly the gaseous forms; and either mount up through the floor, or escape by the sides of the building. At all events, their fertilizing qualities are turned to no account, and the loss, from this single circumstance, is ruinous beyond calculation. It may be necessary, in some measure, to ascertain the amount of this mischief, that we may set about correcting an evil of such formidable magnitude, with a vigorous and resolute energy. I should be afraid to hazard my character with the public, by stating in round and unqualified language, the value of this rich juice which is literally wasted, and thrown away; and, therefore, I shall proceed with caution, and give a detail of facts—conclusive in their bearings—and substantiated by the best authority. They are contained in a letter from Charles Alexander, near Peebles, in Scotland; and are addressed to Sir John Sinclair in 1812 for publication. This intelligent farmer had long been impressed with the great importance of the urine of cattle as a manure; and he set about to discover, by a long and well conducted series of experiments, the best method of collecting and applying it. He began, by digging a pit contiguous to the feeding stall, but distinct altogether from that which was appropriated for the reception of the dung. The dimensions of this pit, according to his own account, were 36 feet square, and 4 feet deep, surrounded on all sides by a wall; and the solid contents were 192 yards. Having selected the nearest spot where he could find loamy earth, and this he always took from the surface of some field under cultivation, he proceeded to fill it; and found that, with three men and two horses, he could easily accomplish 28 cubic yards per day;

and the whole expense of transporting the earth did not exceed 4l. 16s. When the work was complete, he levelled the surface of the heap, in a line with the mouth of the sewer, which conducted the urine from the interior of the building, on purpose that it might be distributed with regularity, and might saturate the whole from top to bottom. The quantity conveyed to it, he estimates at about 800 gallons; but as this calculation was founded partly on conjecture, for he measured not the liquor, it will be better and more instructive to furnish and proceed on DATA, that are certain and incontrovertible. The urine was supplied by 14 cattle, weighing about 34 stone each, and kept there for five months on fudder and turnips.—The contents of the pit produced 284 loads, allowing 2 cubic yards to be taken out in 3 carts; and to spread 40 of these on each acre, so that this urine in five months, and from 14 cattle, produced a compost sufficient for the fertilization of seven acres of land. He states further, that he had tried this experiment for ten years, and had indiscriminately used in the same field either the rotten cow-dung, or the saturated earth; and in all the stages of the crop, he had never been able to discover any perceptible difference. But what is still more wonderful, he found that his compost lasted in its effects as many years as his best putrescent manure; and he therefore boldly avers, that a load of each is of equivalent value.—Conclusions of vast importance are deducible from this statement: and I cannot resist the feeling, of placing them in a strong and advantageous light. They speak a volume of instruction; and if we are willing to learn, they must lead to a very material alteration in the construction of our barns. It appears, then, that in five months, each cow discharges urine which, when absorbed by loam, furnishes manure of the richest quality, and most durable effects, for half an acre of ground. The dung pit, which contained all the excrementitious matter of the 14 cattle, as well as the litter employed in bedding them, and which was kept separate for the purpose of the experiment, only furnished during the same period 240 loads, and these, at the same rate, could only manure 6 acres. The aggregate value of the urine therefore, when compared with that of the dung, was in the ratio of 7 to 6; so that we are borne out by these promises in this extraordinary inference, that the putrescible liquor which in this province, and under the management of our farmers, is wasted and annihilated as far as regards any useful purpose, is intrinsically worth more than the dung, as an efficacious and permanent dressing: and if we take into consideration, that this latter manure is not treated with any skill and judgment, it will not seem surprising, that the culture of white crops has never been carried here to any extent, since we have despised and neglected the only means of creating them.

These defects call aloud for amendment. No country is entitled to be stiled agricultural, where the fundamental maxims of the science are so outrageously violated, and where the prevailing practices set at nought the simplest rules of the art. Grazing draws forth no energies of the mind; it is compatible with indolence, stupidity, and a gross ignorance of all principle; the Arab in the desert can tend his flocks and herds, and leave their multiplication to the instinctive appetites of nature; it is only the first step from the savage life, and in place of hunting for the prey which he devours, man tames and domesticates the lower animals, but leaves their increase, their subsistence, their diseases, to the unguided agency of natural causes. 'Tis the plough, which awakens his dormant faculties, and stimulates to industry. Like the Sovereign of the creation, he commands, and is obeyed; he speaks, and it is done. The weeds, which are the natural inmates of the soil, disappear at his bidding; the grasses spring up, and form a carpet for his feet; the corns are subjected to his power, and wave their loaded ears around his dwelling; the forest gives up its fruit trees, to load his table with their luscious products; and the features of a rugged and forbidding territory are transmuted into the beautiful and sublime, and soften under the influence of his transforming smile. This province is still in a rude and unsubdued state; and its husbandry partakes of its general character.—For this, it is not difficult to account. Emigrants of all trades, of all habits, and of all ranks of society, land on this foreign strand in quest of subsistence. Manufactures are the offspring of civilization, and of the accumulation of wealth; and cannot find their way but into an old country, abounding with resources and population. Here we have none, and cannot have them for a century. The unfortunate stranger, driven from the only stay on which his hope rested, seeks refuge from despair by plunging into the forest, and cultivating the soil to answer the cravings of indignant nature. Without

skill, without capital, without the benefit of instruction, he becomes a self-taught farmer, ready to run into every blunder which ignorance has invented, and to which the vicious culture of the country has lent the sanction of authority. His hut, his barn, his implements of husbandry, his seed, his stock, are all chosen without knowledge, and continued in use without the least exercise of the understanding. He has no landlord to exact a rent, no government to levy taxes, no rival to animate industry. He soon finds above want; the spontaneous productions of the soil yield him scanty subsistence; the luxuries of life are seen only at a distant and indistinct distance; and his faculties, thus lulled asleep by surrounding circumstances, fall into a state of torpid lethargy. It must be stirred up, aroused, and forced into action. This is the province of superior and exalted characters, who, from their elevated rank in society, preside over his destiny. To them a rich reward of gratitude is due; and their memory shall descend to posterity, embalmed by the blessings of a present generation. We are approaching an eventful epoch: the public attention is excited, we are preparing to count over the catalogue of our past errors; we are panting after knowledge; and a new age—full of promise and pregnant with improvement—is arising on our desolate and forsaken prospects.

During this state of public feeling, the evils, which I have pointed out in our treatment of decomposable manures, cannot long remain without correction. The remedies are not only simple, but accessible to every farmer of moderate capital; and the whole expense of the improvement will be compensated by the first, or at most, the second year's saving.

1st. With respect to the formation of a dung pit, I would recommend that a place be chosen near the barn, which should be dug about three feet deep, and of a size proportionate to the stock of cattle usually kept by the farmer. It is not necessary, that it should be built round with a wall, or have a perpendicular descent, as it may slope gently inwards, and deepen gradually towards the centre. After it is thus hollowed out, the texture of the bottom should be examined, and if found firm, impervious, and capable of containing the juices, no further trouble is requisite, and the work is complete: but, if open and porous, it should be coated with clay, and lined with large and coarse flags. Into this pit, earth from some neighboring field, should be first brought, and strewn over the bottom and sloping sides, to the thickness of from 9 to 12 inches. Thus a safe depository will be prepared, for the cleavings of the barn, for waste straw and weeds, for the sweepings of the kitchen, for the stems of peas, beans, cabbages, potatoes, and, in short, all vegetable matter of woody fibre, as well as for the dung of the feeding cattle. After a complete layer of putrescible matter has been spread all over, and when the symptoms of an active fermentation have become visible, the earth, which was thrown out of the excavation, may be slowly returned, and scattered on the surface of the heap, to catch the exhalations which are ascending. Hither, too, the urine should either be conducted by a drain, or carried by buckets; for it is an unpardonable waste to lose the benefit of this rich and invigorating manure. The earth which lies at the bottom will greedily drink up the urine and the vegetable juices, and thus gain a large accession of nutriment and value. So soon as the pit is filled up in the manner herein described, it should be emptied of all its contents; and these should be carted to the field where they are meant to be afterwards applied, and there laid down in some convenient corner, to be mixed up and sorted into profitable compost. The pit—adjoining the barn—may be again lined with mould, and the former operations repeated in procuring and augmenting its contents.

According to this plan every farmer, at the first opening of new spring, should cart out his dung, and form it at once into a composite pile, which, if skillfully managed, will gather heat, and undergo the process of fermentation before it will be needed in seed time. He should then instantly set about the digging of his pit, and the other alterations on the barn, which are indispensable to the successful collection and preservation of his future manure. During summer, this pit should be emptied twice or thrice according to circumstances; and its fermentable and earthy materials transported to the ground which they are destined to fertilize, and there subjected to a new process. Towards the fall, which by its length and mildness makes amends for the advantages of more favoured regions, all those compost heaps as well as the dung about the barnyard, should be spread on the land, which is meant to be immediately ploughed. In the mean while, an additional stratum of mould

should be distributed along the bottom and sides of the pit before the approach of winter, and during that rigid season, the dung may be accumulated without any extraordinary care, and the intensity of the cold is unfavourable to putrefaction, and little loss will be sustained from the dissipation of the gaseous matter. Such farmers as may chuse to take the trouble, and have suitable convenience of covered sheds, may pile up beforehand a quantity of dry earth, which may be scattered over the dung in the depth of winter, on such places as indicate a strong fermentation.

2d. These remarks, and general reasonings will have prepared my readers for the sentiments I must express regarding the construction of our barn floors. They are the objects of my unqualified condemnation as an agriculturist, of my sincere regret as a friend of the country, and of bitter and deep bewailing as the anxious promoter of our future and rapid advancement. Reform here cannot be effected without considerable cost; and I anticipate an obstinate adherence to existing errors, notwithstanding the soundness of the conclusions, and the manifest utility of a change. I must, however, cling to the hope of receiving at least a limited and partial obedience: and I request my well wishers, who have animated me in my course, and borne up my spirits in the midst of difficulties, to listen to the call, and set the first yielding example. The increase of valuable manure will be incalculably great; and the solid benefits will vastly outweigh the trouble and expense. I see only one plan by which this evil may be effectually obviated; but as there is a choice in the materials to be employed, such may be selected as are most accessible in any particular district. After raising up the planks, and building the foundation round and round close to the sills, the void space below the flooring should then be filled and packed firm with earth. As there will be a necessity to cut away all the present sleepers or joists, which, besides supporting the planks, bind and unite the two sides of the frame, pieces of square timber may be stretched across the whole breadth and at a lower depth, and be secured to the bottom of the sills, either by a mortise, or by driving down a round iron bolt. By this means the strength of the frame will be preserved unimpaired; and the operations may proceed without endangering the structure. The earth should then be filled in, till it rises to the level of the present floor, and it should be beaten down by a heavy mallet, till it is completely consolidated. A stratum of clay should be next laid over the whole surface, by which the moisture may be retained and hindered from escaping through the earth. After dividing the interior into its respective compartments, the arrangements must proceed according to the use for which each part is designed. The stalls for the horses and cattle claims a distinguished share of attention. The forefeet of the animal should stand on higher ground than the hind, and there should be in every stall a gradual declivity backward, terminating in a gutter, in order to carry off all liquid matter. To this gutter an easy descent should be given outward, that all the urine may flow towards the pit on the outside of the building, which I have described as the great reservoir of this putrescible stream. The floor of each separate stall, as well as the gutter, may be laid with plank while the clay is soft and yielding, and every seam and interstice may be closed up by the same substance. These planks—thus pressed and imbedded into the clay—may be nailed and secured to transverse beams running along the length of the barn, and so adjusted as to preserve a sloping direction in the feeding stalls and gutter.—But in every case where stables are within the reach of the farmer, they are decidedly superior in firmness, durability, and usefulness; and paving the floor with them, although perhaps a little more expensive in the first instance, will in the end much better answer his expectations. The stalls should be laid with them exactly in the manner, in which Water-Street here has been lately improved; and the gutter may be formed either of similar materials, or preferably of smooth flag-stones, like those forming our foot pavements.

The adoption of these improvements in the disposition of our barns will give a mighty impulse to agriculture; the urine and vegetable juices, which are now lost and dissipated, would multiply the powers of fertility; and the extended cultivation of white crops from the wonderful increase of putrescent manure, would be propelled with a celerity proportioned to the ardent hopes of the country.—*Extract from Agricola, Letter 23.*

HUMILITY.—An humble man is like a good tree, the more full of fruit the branches are, the lower they bend themselves.

From the Farmer's Cabinet.

DIALOGUE BETWEEN A FATHER AND SON.

WATER COURSES—DRAINING—MAKING HAY.

Father.—This is the proper season for watering the meadows, and I see that our neighbor Tacey is carrying out dung on the meadow above us; we must therefore prepare the water courses, and be ready by the first rain which falls. For the same reason which I gave for delaying the ploughing of these upper fields until the spring, I consider that what he is now doing had better be delayed also; I have often told him so, but he will not be advised, although he perceives that I benefit as much by his manure as he does, for as the drainage, which passes the foot of his meadow, enters our water courses on the other side of the hedge, and passes through their whole extent, they receive the washings of the fields above them; and I have sometimes, to convince him of the fact, taken him to see the very large crops of hay which we obtain by these means; but all will not do—I shall now, therefore, open the courses, and receive with thankfulness what he is pleased to give me.

Frank.—I have heard that the ground upon which we now stand, was a swamp when you took it—how did you work such wonders?

Father.—It was indeed a swamp: a sheep could not feed on it in winter, and the grass which grew during the summer was worthless as food for cattle. After securing a lease for twenty-one years. I commenced operations by cutting a very deep drain across the top of the field, knowing that *all the water must come from the higher ground.* The former tenant had gone to great expense in under-draining in every direction, but although the drains were well made and filled with stones, they were useless, because they were not carried deep enough to touch the clay. When I had cut to the depth of five feet, I almost despaired of success, for the soil was still boggy and full of water; another foot, however, brought us to the clay, and immediately the water rose into the drain and ran a strong stream, until it fell into the course, which takes it to the mill stream below. There were then a few holes bored with an auger along the bottom of the drain, and all was complete. This single cut was sufficient to drain the whole field; but I ought to say it penetrates six inches into the clay at the bottom, by which the water is prevented from overflowing on the lower side of the drain. As soon as I could get upon the land, I covered the whole surface with a thick coat of quick lime, and in six months it was so completely drained, and had become so firm, that horses and cattle pastured it until Christmas. I then determined to bring the water back over the surface by cutting rills, and conveying it by them to every part of the field; and have, as you say, "worked wonders," for it is now the best meadow in this part of the country. I, however, attribute most of the success of the undertaking to the circumstance of laying the land dry before flooding, and making proper provision for carrying off the water as quickly as it can be brought on—a provision which is often unattended to in farming meadows of this description.

To ELKINGTON we are indebted for the present simple and most efficacious system of draining, for the discovery of which he obtained a reward of £1000 from the British Parliament. I say discovery, for so indeed it was; he had put a man to drain a field, and passing him while at work, on his way to the sheep-fold with an iron bar on his shoulder, and seeing that what he was doing was labour in vain, he threw the bar from his shoulder, which on falling penetrated the bottom of the drain, and on pulling it out, the water immediately flowed through the hole; he had tapped the spring as well as his ideas, which, like the water, flowed out; and this was to him a source of great wealth and honor. I must get his book, which is full of interesting plates, recording and describing this circumstance, as well as very many other instances of successful drainage in various parts of the country. I knew the Chairman of the Committee of the House of Commons who voted him the reward; his name was Colquhoun; he told me that Elkington was a plain man of strong mind, but without education, and was compelled to employ others to do all his correspondence, and even the writing of his book.

But I knew another instance of recovering a swamp, still more curious: the herbage which grew upon it was of the coarsest species, and the spot had been noted for rotting all the sheep which had pastured upon it for many years. It was near a town, and the experiment was made by the owner, a man of large fortune, more for the example to others, than of benefit to himself. He regularly

sent his cart to the town during the winter, to collect the sheep's horns at the slaughter houses; these he caused to be stuck very thickly into the sod, which was so soft that it was only necessary to enter their points, and they were soon out of sight. You must suppose it was a curious sight to see a field stuck all over with sheep's horns! By the spring they had nearly all disappeared, and a heavy roller passing over, did the business on those parts which were sufficiently firm to bear the operation. The result was truly astonishing! a ten fold crop of most excellent quality; white clover abounding. This was many years ago, but I understand the effects are still great as ever; no manure has since been applied, nor does it appear that it will ever again be required.

Frank.—If this had been my field I should have named it horn meadow. But I have always observed that the grass of our meadow is of a different sort to that of farmer Tacey's, and when both are fed by cattle, it is plain that they find a difference in the quality too, for while there are large patches of his which the cattle will not touch, and where the grass grows long and rank, the surface of ours is eaten close, and no long fog is remaining on any part of the field at the time of removing the cattle in the autumn: how is this accounted for?

Father.—The thick covering of lime which I gave it soon after draining is the principal cause; but since that, I have often gone over it, adding more to those parts where the grass was rank; and where the herbage was very short and fine, I have encouraged a stronger growth by spreading compost, by which means I have obtained that uniformity of crop which has attracted the notice of strangers, while our neighbors pay but little regard to it, although the quality of our hay, when compared with theirs, has often been acknowledged.

Frank.—I have often observed how much finer and sweeter our hay is than farmer Tacey's, and when Robert Tacey has sometimes assisted me to fodder the cattle, he has remarked it too; and neither he nor I can account for the difference in cutting our hay out of the stack, and that of his father's; our's is so hard and close as almost to defy the knife, while to cut his, is a pleasure, and requires but little exertion. Is that difference occasioned by the lime?

Father.—In a measure it is, as the herbage is so much finer, and the juices so much richer. But the great difference is in the mode of making the hay. Suppose now, we try our hand at a theory of hay-making. When the grass is cut and partially dried, and put into the stack, it very soon shows that the juices are beginning to ferment; internal heat is engendered, by which the air is rarified and expanded, and escapes by the outer surface of the stack; this causes a vacuum in the centre, when, the external atmosphere being now heavier than the interior, the hay is pressed forcibly downwards so as to supply the space before occupied by the air, and this process goes on so long as fermentation continues; thus the external air is prevented from re-entering, and the greater the degree of fermentation, the closer the hay is pressed together, and its fragrant particles prevented from flying off and being dissipated.

Now, from an examination of this theory, how improper must be that mode of making hay practised in many places, where, after the grass is cut, it is left exposed to the action of the sun and wind until its most nutritious particles are dissipated, and then it is put into temporary stacks, to be pulled to pieces and removed to the hay barn, just as the remaining juices are in a state of fermentation, where no farther pressure can take place, and in consequence, the damp air having free ingress, the hay soon becomes dusty, and comparatively almost worthless. Where a large quantity of hay is to be stacked together, it should be dried rather more than is requisite for a smaller quantity, but on no account ought it to be put together while in a damp state. Remember, that hay put together damp, always becomes mouldy; when too green, but dry, it might heat too violently, but never grows mouldy. Hay, when properly made, and not too long exposed, will be found of a superior quality; it will retain more of its juices, rendered *viscous* by fermentation, and will be worth more than double the value of that which is kept abroad in the field until it has more the appearance of straw than of hay.

Frank.—I have heard that when hay has been entirely spoiled by exposure to wet weather during the time of making, it has been completely restored by sprinkling it with salt while stacking.

Father.—I have no idea that hay in such a state can be completely restored by any means; this is too much to expect, for where a great portion of the juices have been *de-royed* (having run into what is called the *acetous* fermentation) how are they to be renew-

ed? It is quite sufficient if the portion which still remains can be called into activity by the *septic* properties of the salt, (you know that a small quantity of salt will produce and accelerate fermentation, while a larger quantity will prevent it altogether, acting then as an *anti-septic*.) and it might thus be the means of renovating the hay to a *certain extent*, but not entirely.

Frank.—I have also heard that hay is exceedingly enriched in its fattening properties, by being sprinkled with linseed oil at the time of stacking.

Father.—Lord Egremont made a trial of the value of linseed oil for this purpose, and expresses himself satisfied with the result; he, however, found it of too heating a nature for horses and milch cows, but for fattening cattle and sheep it proved excellent, "coming out of the stock very moist and clammy. But I have never had occasion to practise either of the above recipes, for when the weather at the time of making is wet, I keep it exposed as little as necessary, and if I can bring it to the stack with the flowers which are mingled with it of their natural color, (this is my criterion,) I am satisfied that nothing need be added to render it more palatable or more nutritious.

Frank.—This Theory of Draining and Hay-making shall I put into my Journal, and if I continue to add to it as I have done lately, I shall soon have a book worth preserving.

Father.—Then just take one observation more, by way of *claud*. The best salt for curing fish, was, some years ago, made on Sundays!

Frank.—But you are not serious—no one can believe that for a moment.

Father.—I do not wonder at your surprise, but I am indeed serious, and will in an instant convince you of the truth of the assertion. It was customary, on the Sunday mornings, to fill up the condensing pans at the salt works with brine, and to damp the large fires, in order that slow evaporation might go on, as the pans were unattended on Sundays. This slow evaporation gave time for the Magnesian salt, with which the brine is highly impregnated, to deposit, and form in crystals at the bottom of the pan, it being characteristic of this salt to chrysalize at a much less density than the *Muriate of Soda*, which is, as you know, the proper name of our common table salt. On Monday morning then, the brine, the purified, and which still remained uncrystallized, was drawn off to another pan, where the evaporation was carried to the crystallized point; the crystals from this were large and pure, and were reserved for the purpose of curing fish, and delicate meats. For this *hint* the process of salt making has been changed, and the evaporation is now stopped at that point at which the Magnesian salt is deposited, after which the purified brine is drawn off, to be crystallized in other pans. The Magnesian salt is cut out of these pans, and when purified, it forms the basis of Epsom, Cheltenham, and the effervescent salts of the Drug stores.

Frank.—I am indeed surprised! but it is now at the simple and beautiful way in which such an improbable circumstance is brought about.

BONE DUST MANURE.—The exportation of bones from Germany to England, constitutes a singular epoch in the annals of commerce. Myriads of tons have been already exported without glutting the market, or causing a cessation of the demand. In the vicinity of the North Sea, mills have been erected to pulverize them. This bone powder, or bone dust, was long ago exclusively applied to the purposes of hot-houses by German horticulturists; but, the English emboldened by their riches, have extended its use to general objects of agriculture and fertilize by these expensive means, their cold, humid, and poorest land, bringing them into the highest state of cultivation.

There is, consequently, a proverb, "that one ton of German bone-dust saves the importation of ten tons of German corn." Malta formerly covered her naked rocks with foreign soil, so the England now fertilize her clay and sandy heaths with German bones. Near the sea shore, even the church yards are robbed of their venerable relics, which is only ironically excused by rendering the German bone trade popular. An agriculturist having instituted some experiments to test the effects of the manure, obtained the following results—1st, That in respect to the quality of the corn, it effects a change as 7 to 5; in respect to the quality as 5 to 4; in regard to the durability of the energy of the soil as 3 to 2. It likewise yields the following collateral advantages—1st, It destroys weeds; 2d, It diminishes the necessity of suffering the land to lay fallow; and it answers equally on wet or dry soils.

TRUE NOBILITY OF LABOR.

BY THE REV. ORVILLE DEWEY.

How many natural ties are there between even the humblest scene of labor, and the noblest affections of humanity? In this view, the employment of mere muscular strength is exalted. There is a central point in every man's life, around which all his toils and cares revolve. It is that spot which is consecrated by the names of wife, and children, and home. A secret, an almost imperceptible influence from that spot which is like no other on earth, steals into the breast of the virtuous laboring man, and strengthen's every weary step of his toil. Every blow that is struck in the workshop and the field, finds an echo in that holy shrine of his affections. If he who fights to protect his home, rises to the point of heroic virtue; no less may he who labors his life long, to provide for that home. Peace be within those domestic walls, and prosperity beneath those humble roofs! But should it ever be otherwise; should time ever come when the invader's step approaches to touch those sacred thresholds, I see in the labors that are taken for them too; I see in every honest workman around me, a hero.

So material do I deem this point—the true nobility of labor, I mean—that I would dwell upon it a moment longer, and in a larger view. Why then in the great scale of things, is labor ordained for us? Easily, had it pleased the great Ordainer, might it have been dispensed with. The world itself might have been a mighty machinery for the production of all that man wants. The motion of the globe upon its axis, might have been the power to move that world of machinery. Ten thousand wheels within wheels might have been at work; ten thousand processes, more curious and complicated than man can devise, might have been going forward without man's aid; houses might have risen like an exhalation,

with the sound
Of dulcet symphonies and voices sweet,
Built like a temple;

gorgeous furniture might have been placed in them, and soft couches and luxurious haquets spread, by hands unseen; and man, clothed with fabrics of nature's weaving, richer than imperial purple, might have been sent to disport himself in there Elysian palaces. "Fair scene!" I imagine you are saying; "fortunate for us, had it been the scene ordained for human life!" But where, tell me, had been human energy, perseverance, patience, virtue heroic? Cut off with one blow from the world; and mankind had sunk to a crowd, nay, far beneath a crowd of Asiatic voluptuaries. No, it had not been fortunate. Better that the earth be given to man as a dark mass whereon to labor. Better that rude and unsightly materials be proved in the ore bed and forest, for him to fashion into splendor and beauty. Better, I say, not because of that splendor and beauty, but because the act of creating them is better than the things themselves; because exertion is nobler than enjoyment; because the laborer is greater than and more worthy of honor than the idler. I call upon those whom I address, to stand up for that nobility of labor. It is heaven's great ordinance for human improvement. Let not that great ordinance be broken down. What do I say? It is broken down; and it has been broken down for ages. Let it then be built up again; here if any where, on these shores of a new world, of a new civilization. But how, I may be asked, is it broken down? Do not men, toil, it may be said. They do indeed toil, but they too generally do it because they must. Many submit to it as, in some sort, a degrading necessity; and they desire nothing so much on earth as escape from it.

They fulfil the great law of nature in the letter, but break it in spirit; fulfil it with the muscle, but break it with the mind. To some field of labor, mental or manual, every idler should fasten as a chosen and coveted theatre of improvement. But so is he not impelled to do under the teachings of our imperfect civilization. On the contrary, he sits down, folds his hands, and pleases himself in his idleness. This way of thinking is the heritage of the absurd and unjust feudal system; under which serfs labored, and gentlemen spent their lives in fighting and feasting. It is time that this opprobrium of toil were done away. Ashamed of thy dingy work-shop and dusty labor field; of thy hard hand, scarred with service more honorable than that of war, of thy soiled and weather stained garments, on which mother nature has embroidered, amidst sun and rain, midst fire and steam, her own heraldic

honors?—Ashamed of these tokens and titles, and envious of the flaunting robes of imbecile idleness and vanity? It is treason to nature; it is impious to heaven; it is breaking heaven's great ordinance. *Toll, I repeat it—TOLL*, either of the brain, of the heart, or of the hand, is the only true manhood, the only true nobility.

From the Farmer's Cabinet.

DUTIES PERFORMED BY A GOOD FARMER.

Every duty faithfully performed hath its reward.

The approach of winter always induces the thoughtful, careful and industrious farmer to look about him to see that he is prepared to meet so boisterous and inclement a season of the year in the best possible manner. His windows, his doors, and the roofs of his buildings, are all examined, and if necessary, made tight and secure. His barn and stables are looked to and put in good order. His sheep, and hogs, and poultry have all comfortable, dry lodgings prepared for them in due season, for he knows that no animal can thrive and do well, that is not well housed, and well fed, and every way made clean and comfortable. His potatoes, his sugar beets, his turnips and all his winter fruits and vegetables are well secured against frost, and placed in such positions that ready access can be had to them when necessary, without subjecting them to danger of injury by exposure to the weather. His fuel is so arranged and prepared for current use that his family can procure it without any unnecessary exposure to the rude blasts of winter. His fields and meadows are kept closed during the winter and early part of the spring; so that animals may not be permitted to ramble over them and injure his grounds. His barn yard is so arranged that his cattle never leave it during the period of winter feeding, by which means he saves all their manure for the nourishment of his crops. His implements of husbandry and tools are all carefully housed and arranged in good order, so that they can be had when wanted for use. His garden, in which not a weed has been permitted to perfect and scatter its seed during the autumn, is thrown up into ridges about eighteen inches high, separated only by trenches extending from end to end of the beds; this he knows exposes the soil to the meliorating influence of the frost, destroys the grubs and worms which seek refuge during the winter, deep in the ground, and induces the ground moles to look out for dryer and warmer lodgings elsewhere. By this plan of ridging his garden in the fall, as soon as the frost is out in the spring, his beds are dry and warm, and admit of being levelled and worked once, long before fall, wet ground can with propriety be moved by the spade; this enables his family to have a supply of garden vegetables several weeks earlier than those who have less intelligence or industry; the deeper tith and more thorough pulverization of the soil, also increases the growth of his plants, and enables them the better to protect themselves against the contingencies of either very dry or very wet seasons.

During the evenings that are now growing long, his wife and daughters are industriously engaged in light and necessary household duties, while the boys are reading instructive, useful books, and among them the Farmer's Cabinet occupies a conspicuous place, both on account of its variety and its practical utility; this furnishes texts for rational and improving conversation, which cultivates and improves the minds and warms their affections, and produces on them even a greater effect, than ridging and trenching the garden does on the vegetables. On the Sabbath, he with his family attends a place of worship, to obtain religious instruction and consolation, deeming that of infinite importance to himself and those about him. The good farmer has his mind often turned in reverend thankful acknowledgements to the Great and Good Husbandman, his landlord, under whom he holds his tenure, and who, he knows will at some period not very remote summon him to appear before him to give an account of his stewardship when he shall be no longer steward; he therefore endeavours to preserve himself and his family in a state of preparation for the great summons that will warn him off, so that he will appear with joy, and not with grief, to render an account to his great benefactor and master of the deeds done in the body, whether they be good, or whether they be evil.

TOP DRESSING OF GRASS LANDS.

Although, as a general rule, manure applied as a top dressing is in some measure wasted by sun and air, and given to the winds and waters, still in many cases it will be expedient to apply it to the

top of the soil instead of ploughing it under. Sometimes it is inconvenient to plough grass land which may need manure. The soil may be wet and rocky, or otherwise unfit for the plough. In such cases mowing land should, once in two or three years, have a top dressing of some manure suitable to the soil. Plaster of paris is a good top dressing on some grounds and for some plants; and in some cases it has no perceptible effect. Mr. *Candolle*, a French writer, observes that plaster acting or operating chiefly on the absorbent system of plants, its effects are not like those of manure buried in the soil, which set principally on the roots. The latter, according to their *particular nature*, divide, soften, enrich, warm or stiffen the soils with which they are mixed. The quantity of plaster spread on lands is so trifling that it can have little effect on the soil. I speak from experience. "Plaster buried in the earth where sainfoin has been sown, has produced no visible alteration; whilst the same quantity of plaster spread over the same surface of sainfoin, has produced the most beautiful vegetation." The same writer agrees with other agriculturists in opinion that plaster operates on plants in a direct ratio to the size and number of their leaves.

There is a difference of opinion among agriculturists with regard to the season at which manure should be applied to mowing ground. *Loudon* says, "In the county of Middlesex, where almost all the grass lands are preserved for hay, the manure is invariably laid on in October, while the land is sufficiently dry to bear driving of loaded carts, and when the heat of the sun is so moderated as not to exhale the volatile parts of the mass. Others prefer applying it immediately after haying time, from about the middle of July to the end of August, which is said to be the good old time, and if that season be inconvenient, at any time from the beginning of February to the end of April."

Lorian says, "if dung be used for top dressing, it should be applied soon after the first crop of grass has been mown; and before the manure has suffered any material loss by fermentation. The grasses should be suffered to grow till they form a close shade. After this they may be pastured; provided a good covering for them be preserved. This will prevent much exhalation; it will also keep the soil much more open to receive the juices of the manure. As water does not pass off so freely through a close pile of grass, much of the coarser particles of the washings from the manure will be arrested in their progress through it, and much more of the fluids from the dung will sink into the soil. The close covering also greatly favors the decomposition of the litter, and by keeping it flexible causes it to sink further into the soil and lie much closer to it. Therefore but little if any of it will be found in the way of mowing the ensuing crop of grass, or of making it into hay; provided the manure be evenly spread over the ground. But as the want of a second crop of hay, and other circumstances, may prevent the cultivator from hauling the dung at the proper time, he may haul and spread it any time before the frost sets in; but not with the same advantage. Still if care be taken in raking up the hay of the ensuing crop, but little of the litter will appear among it.

THE ROT IN SHEEP.

The most fatal disease among sheep is the rot, which is thought to be incurable; but I know from experience, that the progress of the disease may be so checked, that the animal will get fat enough for the butcher. There are various opinions as to the way in which this disease is contracted. I have ever thought it has been by the sheep eating in summer, or autumn, the grass of flooded meadows, or swampy pastures, on which some sort of grub had deposited its larvæ, which are not destroyed by the heat of the stomach, but mixing with the chyle, find their way into the vessels of the liver, where they become what are commonly called flukes, from their resemblance in shape to flounders; where they absorb the chief nourishment of the blood of the animal, and then, in a short time cause its death. It may be fairly asked, how is it that beasts eating the same grass are not affected by it? The reason probably is, that the digestion of an ox or cow is so much stronger than the larvæ that they are destroyed and carried away with the food.

An eminent surgeon has informed me that there is no communication with the stomach and the liver, but as he cannot in any way account for the flukes getting into the liver, I do not give up my opinion. I am strengthened, too, in my belief, from its being well known, that after a frost of forty-eight hours, or less, sheep may safely be kept in a pasture, which, had they been put in be-

fore the frost (even for one day,) would certainly in the course of two or three weeks, be found to have flukes in their liver, but which is prevented by the frost destroying the larvæ on the grass. I am quite aware that many other scientific objections may fairly be made against my idea; such as that the worm or grub, a cold blooded creature, intended to live in common atmospheric air, could not exist in the inside of any animal. Bots, so common in horses laying out at grass, it is well known, are produced from the horses biting each other in kind fellowship, about their manes, where some sort of fly or moth had deposited their eggs or nits, which the horses thus got into their mouths and stomachs, where they become bots, and make their appearance in the horses' fundaments. It cannot be supposed that instinct points to the moth or fly to leave its eggs there for the purpose of its getting into the horses' stomach; it appears to me that it probably only leaves it on that part from finding a saliva there from the playful biting of another horse. Hearing a farmer complain, in the year 1814 of the great loss he had sustained by the rot in his sheep, I recommended him to try Armitage's remedy; he had no faith in any of the nostrums, it was, however, agreed between us, that as I was going to London the next day, I should bring a sufficient quantity for a score of sheep, which he was to take on my return, or sell me a score of his sheep for ten pounds. He sent me the sheep. Our farms were divided only by a small brook, but the sheep having to walk a mile to get to my farm, two of them died in that mile. I dosed the eighteen according to directions. Sixteen soon seemed more lively for it; to the two that did not, I gave the medicine that I had to spare, which proved to be over-dosing them, and consequently killed them. Thirteen of the others I made fat and sent them to London, and made about forty-seven shillings a head. One proved what is here called a rubber, which no feeding will make fat; one was drowned.

To see what sort of mutton the best was, I had one killed and consumed (all but one leg which I sent to the farmer,) in my own family, who knew nothing of the circumstance attending it, and therefore found no fault with the meat; but some one, I recollect, commended one joint as being very tender. The farmer could scarcely believe that the leg of mutton I sent him could have come off one of the poor miserable animals that he sold me. For my own part, I confess I could not relish the mutton, although I felt sure there could be nothing unwholesome in it. The difference between that and the other mutton is, the lean is more tender and less flavored; the fat is whiter, and the gravy lighter colored. The farmer informed me afterwards of one circumstance which was important. He said he understood I was to have forty of his sheep, and therefore he drew forty of the worst of his flock, and marked them for me; that the next day, not liking to part with so many at so poor a price, he turned back into his flock twenty of the best of them with the mark on, and every one of them twenty died. A few years ago, I made several inquiries after the medicine, and could hear nothing of it, but found that Armitage was dead. No medicine can make sound a liver that is in part rotten; but it can so stop the progress of this disease by killing the flukes, as to allow the sheep, with a summer's feeding, to get remarkably fat. The chief ingredient in all medicines must be oil of turpentine.—*Hillyard's Practical Farming.*

From the Cultivator.

CURE FOR THE SCAB IN SHEEP.

Mr. Buel,—Sir—In a late Cultivator, you mention the disease to which sheep are subject, and many things considered beneficial to many disorders. Having suffered much from the scab in my small flock, four years ago this winter, I thought it might be useful to some of your readers to state my experience in contending with this destructive complaint, and the result. The first of September, I had 200 Merino Sheep, in good flesh, but thought symptoms of the scab were discoverable in two or three. I went a journey to the Ohio, and returned the 3d of November. When I came home about 40 of my flock were in a situation sickening to behold. Knowing it was the scab, and being experimentally ignorant of the proper remedy, I resorted to books and the various receipts commonly used. Among the rest, I tried the mercurial ointment recommended by Sir Joseph Banks, without the desired effect. The disorder increased and baffled all my exertions. The sheep began to die, and at shearing time more than 100 were dead—after I had taken unwearied pains, and spent much time, and several dollars of my money for medicine, and had lost more than

half my flock, I felt almost ready to abandon the wool-growing business. All my remaining sheep appeared more or less under the influence of the disagreeable disorder. But having heard of Tobacco, and this being almost the only remedy prescribed and not tried, I made use of it, and with perfect effect. The modus operandi was this. I bought fifteen or eighteen pounds of cheap Tobacco, cut it to pieces to get the strength easily out, put it into a large kettle, and boiled it as long as I thought necessary. I then took a forty gallon cask, sawed the end so as to nail a wide board on the edge of the cask, the other end was fastened to the yard fence, enough higher to have the liquor run back into the cask. The tobacco liquor is put into the cask hot: as soon as cool enough hot to injure the sheep, put into it a gill of spirits of turpentine, which must be repeated after dipping a dozen sheep. Take the sheep by the forelegs, and put him in tail-foremost, as you would a pig to scald, the liquor coming as you crowd him down up to his head and ears; turn him round in the cask to have the liquor touch the sheep all over. I had many of mine ducked head under, then pulled them up on the board, held them to drain a few minutes, and let them go. Having served them all in this way, I turned them to pasture, and have not lost a sheep since, unless by accident. If done effectually it kills all the ticks.* In shearing, the next year, we discovered only two ticks. The lambs were dipped as well as the old ones. The sheep were all fat the next fall, fit for mutton. I fully believe this mode of treatment will prevent the disorder, make the sheep more healthy, the wool better, and by the improvement of the flock pay the expence and trouble many times over.

URI TRACY.

*The tick is an acarus,—the scab is caused also by an acarus, barely visible to the naked eye,—the itch is caused by another species of this mischievous insect. The mites in old flour, pearl barley, and rice are acari, and there is some reason for believing that Epidemic Dysentery and Ague are produced by Acari.—Ed Col. FARMER.

ENERGY OF CHARACTER.—Energy of character is the philosopher's stone of this life, and should be engraved upon every heart. It is that which has peopled the temple of fame—that which has filled the historic pages with great names, and the civil and military world—that which has brought a race from barbarism, drawn the veil from science, and developed the wondrous powers of Nature. It makes men great and makes men rich. First or last, it brings success. Without it, Webster would have been a New Hampshire Lawyer—Tom Ewing a buck eye salt boiler—and Ben Franklin a journeyman printer. Without it, Demosthenes would have stammered on to his grave, and Cincinnatus died a common soldier. Shakespeare would have been shot for poaching—Pope died selling tape—Roseoe lived selling beer 'by the small'—and Napoleon gone out of the world a Corsican bully. With it, each one has not only done much good for himself, much for his day and generation—but much for the world in the past, the present and the future.

Energy of character will do the same thing for any men in a small way that it has for those. Give the lawyer energy of character, and he will succeed at the bar without talent. It is the secret by which the merchant, the artist, the scholar, and mechanic arrive at distinction and wealth—if they fail once, they try again; no contrary winds beat them down—or, if down, they will not stay down. The man who has energy of character, will rise in spite of fortune, and in spite of opposition. Give a man energy and he is a made man, put him where you will, and surround him by what you will. He who gives up in despair, and cuts away the sheets of his canvass, because he finds contrary winds in his passage, is a poor navigator.—*Louisville Jour.*

DOMESTIC ECONOMY.—Diseases are chiefly produced by the errors of mankind, in one way or another; and is it not reasonable to believe that a very full proportion of them are the result of the ignorance or unskillfulness of housewives? He who is most ready to answer this question negatively, is probably least acquainted with facts.

How many times have I seen apples which were baked or stewed in an iron basin turned brown or almost black by the process. They are stained by the kettle, we are told. And yet the kettle is clean. The truth is the acid of the apple combines with a small

portion of oxydized iron, and forms a substance not unlike cop-peras, which colors the apples.

If the acid which is thus active is, in reality the sulphuric acid—I suppose it is not—the substance which is formed is sulphate of iron, or copperas—a compound which every body knows is rank poison. At any rate, there is every reason to fear that most kinds of food which are colored, as it is called, by the kettle or vessel in which they are prepared or kept, is poisoned.

But these are only specimens of the mischief to which the community are exposed by the ignorance of housewives upon this subject, I might mention hundreds of others.

Females should study Chemistry; they will not only give to us much health by it, but yearly save a large sum of money.

THINGS THAT I HAVE SEEN.—I have seen a farmer build a house so large, that the sheriff turned him out of door.

I have seen a young man sell a good farm, turn merchant, and die in an insane hospital.

I have seen a farmer travel about so much, that there was nothing at home worth looking after.

I have seen a rich man's son begin where his father left off, and end where his father began—penniless.

I have seen a young girl marry a young man of dissolute habits, and repent of it as long as she lived.

I have seen the extravagance and folly of children, bring their parents to poverty and want, and themselves into disgrace.

I have seen a prudent, industrious wife, retrieve the fortunes of a family, when the husband pulled at the other end of the rope.

I have seen a young man who despised the counsel of the wise and advice of the good, end his career in poverty and wretchedness.

I have seen a man spend more in folly than would support his family in comfort and independence.

I have seen a man depart from the truth, when candour and veracity would have served him a much better purpose.

I have seen a man engage in a law-suit about a trifling affair that cost him more in the end, than would have roofed all the buildings on his farm.—*Farmer's Cabinet.*

TRUE PHILOSOPHY.—THE TWO FARMERS.—Two Farmers, who were neighbors, had their crops of early peas killed by the frost. One of them came to condole with the other on their misfortune. "Ah!" cried he, "how unfortunate we have been, neighbor! I have done nothing but fret ever since. But bless me! you seem to have a fine healthy crop coming up just now. what are these?" "These," said the other, "why these are what I sowed immediately after my loss." "What, coming up already?" cried the fretter. "Yes; while you were fretting, I was working." "What! and don't you fret when you have a loss?"—"Yes, but I always put it off until I have repaired the mischief." "Why then you've no need to fret at all." "True," replied the industrious gardener, "and that is the very reason; in truth, it is very pleasant to have no longer reason to think of misfortunes; and it is astonishing how many might be repaired by a little alacrity and energy."

SOAKING CORN FOR HORSES.—A Gentleman who resides in Baltimore County, and is one of the most successful farmers in that vicinity, informed us a few days since, that he saved at least one third of his corn by the manner in which he fed it out to his horses. His plan is this: He has two hogsheds placed in his cellar, where they are secure from freezing. These he first fills with corn in the ear, then pours in a quantity of water to cover the corn. After the ears are well soaked, he commences feeding, giving to his horses but two thirds the usual quantity allowed. As one of these hogsheds become empty, he refills it; and by the time the other is empty, the one last filled is sufficiently soaked for use. In this way the cobs become so softened that the horses consume the whole of them, and they are thus made to add fully one third more to his stock of feed. He assures us that his horses eat the cobs with avidity, keep in good order, and are just as competent to perform plantation labor, as when they consumed the grain alone. The success of our informant should stimulate his agricultural brether to follow his example, as the labor of preparation is nothing compared with the great saving effected.—*Am. Paper.*

GRASS LANDS, CLOVER SOWING, &c.—It is admitted on all hands that one of the most difficult parts of the farmer's duty is laying down regularly and successfully grass lands. John H. Powell,

an intelligent and experienced farmer of Pennsylvania, says that in this country there is, not usually more than half the quantity of seed sown that should be to ensure success;—that from experience he has found that three half pecks of clover seed mixed with two bushels of orchard grass seed is in no instance too much to sow on an acre of land; that by putting in this quantity, by light harrowing and rolling of the ground, if the weather and soil be in proper state, immediately after sowing, will secure its vegetating and improve the grass. Autumnal top-dressing with dung manure, may be profitably applied to protect young clover, particularly if it has been pastured: A double advantage has been obtained by using abundant supplies of seed; the hay is finer, and of course more nutritious, and when the crop is taken off, the soil is less exhausted from the rays of a hot sun.

DRY ROT IN SEED POTATOES.

In the year 1835, a very considerable loss was sustained in the potato crop in Lower Canada, in consequence of the rotting of the seed after being planted in soil that was perfectly dry. The potatoes immediately after being cut, and before they were planted, commenced rotting at the cut part, and large quantities of prepared seed were thus lost by many farmers, contrary to the experience of all former years. Another extraordinary circumstance was, that on farms, or in fields separated only by a fence, without any visible difference in the soil or cultivation, the seed rotted in one and remained sound in the other. In these cases, certainly the seed was taken from different cellars. It was also observed, that seed planted whole did not rot in any case. This year, I have found that potatoes raised last year, in fields where the dry rot prevailed, were very subject to decay, as I have never observed them to be before. In England, this disease in seed potatoes was very destructive to some crops last year, and is said to be a new disease that has not been known until the last three or four years. I have seen an excellent article from an English farmer at Leeds, on this subject, a few extracts from which I give below. He says, that from several experiments he has come to the conclusion, that the failure of the potato crop is principally, if not altogether, from the following causes, viz:—

- 1st. From over-ripeness of the potatoes made use of for seed.
- 2nd. The method of preserving through the winter.
- 3rd. Using all sizes of potatoes for sets, and cutting them into too small divisions.
- 4th. Exposing the sets to the atmosphere too long when cut.
- 5th. Covering too deep with rotted manure or heavy soil, especially in a wet season.

The remedy for the 1st. That the potatoes intended for seed should be taken up when at the full size, but while the tops are quite green, and the potatoes are not easily shaken off the stalks or stems. He states that while two out of three of the sets taken from potatoes that were quite ripe, failed, not one of those sets from the potato taken up while the tops were green, failed, and that the unripe seed produced double the quantity at each root that the roots from the ripe seed did.

For the 2nd. He comments that potatoes for seed should be put into pits, in small quantities, where they would be preserved from sprouting. This could be readily done in British America, where there is dry soil. I have repeatedly kept them in this way perfectly safe, and the last winter, which was the most severe I have seen in Canada for many years, I kept potatoes perfectly safe in a pit. If the soil is dry and sandy, pits may be about four to five feet deep, and the same in width; the potatoes filled into them to within about a foot of the surface; this empty space filled closely with hay or straw, pieces of wood then placed across the pit over the hay in such a manner as to bear up the weight of the earth that would be put on as covering, of which there should be two or three feet, and so shaped as to throw off the rain, should any fall before the winter. At the approach of winter the pits might have a few loads of stable dung put over them. They will keep in this way better than in cellars however good. In cellars, they are much given to sprout, and hence greatly exhaust their vegetative power before planting. If the potatoes intended for seed should not be very ripe, it would be a good plan to allow a small quantity of dry earth or sand to mix with them in putting them into the pits. It is also essential that the pits be perfectly dry, and if necessary a drain may be made to secure their being so.

For the 3rd. He recommends to plant whole potatoes of good

size, and if they should be cut, that large potatoes cut in two and planted immediately will be best. I last year had proof that the plan was a good one.

For the 4th. That the potatoes should not be taken out of the pit where they were preserved during the winter, until required for planting; that they should be planted whole and covered immediately. I have up to this last year constantly had my potatoes cut for seed a week or two, or perhaps longer, previous to planting, without ever losing any by the rot until last year. The English farmer states, when he gets new seed from seeds-men, he sows them on the ground, waters them well, and covers them lightly with soil until they sprout; if any do not sprout they are thrown away, and the good seed only planted; the consequence was he seldom lost a crop.

For the 5th. It is not necessary to cover potatoes deeply, nor is it necessary to use very rotten, or very wet, heavy manure, in a recent state. After the potato plants are over the soil, in their after-culture they may be earthed up as high as possible, or as the plants will admit. I have remarked, both this year and the last, that the potatoes which were early planted, before the soil became very warm, were not so subject to the dry rot as those that were planted in June.

This spring the dry rot has not been so prevalent as last year, but nevertheless, there are considerable failures or blanks in potato fields from this cause. I changed my seed this year and got them from a person residing off the Island of Montreal, whose potatoes had not the dry rot last year, and I find scarcely any failures. Where I planted a few of my own, some of them have rotted, and I know this to be the case in other similar instances. The June Agricultural Report for the District of Quebec states that the dry rot has caused the failure of potatoes in many fields this spring. I believe it is imprudent to make use of seed from potatoes that have been subject to the disease, though they may appear perfectly sound when planting them. The change of seed is very necessary. I am convinced it will in most cases prove profitable, though only taken from the next farm, provided the potatoes are not diseased. To exclude the air, whether hot or cold, from potatoes, when in the cellar, is very necessary to preserve them in good perfection for the table or for seed.

To renew the seed by raising it from the apple must be necessary occasionally. If it was not so, I do not think the apple would be produced. I would most strongly recommend every farmer to endeavour to raise some new seed potatoes from the fruit called the "apple," which is produced on the halm or stem of the plant which comes into blossom. It is only the stems that do come into blossom that will produce the apple. The following article taken from the English Penny Magazine for the last year, may be useful to the farmer. It gives very proper directions for raising new seed potatoes from the apple:—

"Every one is aware that the roots or tubers, which is the edible part, grown under-ground, of very irregular form and size, though when planted upon land of the same nature, always producing potatoes of similar quality when the seasons do not materially differ. It is, however, not generally known that varieties brought to our markets are so numerous, that one account has been lately presented to the Highland Society of experiments made upon 130 different sorts; another has been published by the Agricultural Society of Geneva, containing details by Professor De Candolle of the properties and produce of 154 species collected from various parts of Europe and America; and there are beside these the records of numberless trials in the County surveys of the United Kingdom, and the transactions of the London Horticultural Society. Now as the qualities of the root when grown in the usual way do not vary, it is evident that these varieties can only be produced by pursuing a different process of planting, as thus: the halm or stem of the plant, which springs from the tuber, carries a small fruit called the "apple," which is about the size and appearance of a green plum, but containing many seeds, which, when again sown, produce new plants, and, singular as it may appear, frequently bear roots of a kind nearly distinct from each other in weight, flavour, and those properties which constitute their chief value.

"It will be readily imagined that great advantages may be gained by the production of superior species; and accordingly trials are constantly made by farmers and gardeners with a view to obtain them; but the operation is slow. For this purpose a few large ripe apples should be chosen from a perfectly healthy plant of an approved kind, and preserved carefully throughout the winter in

land, so as to keep them apart from each other. In the beginning of April the seeds should be either picked out from the apples and sown in narrow drills or rows in a prepared bed of garden mould, or the apples and sand may be mashed up together, and sown in the drills without the 'troub' of separation.

When the seed bring plants about an inch high, they should be raised carefully, with as much earth as possible adhering to their roots, and planted out in rich and well pulverized ground, the rows being about fifteen inches wide, and the plants standing ten inches asunder, keeping them clear of weeds both by the hoe and by hand-weeding; and when ripe the roots should be cautiously selected from frost, either in an out-house well covered with straw, or in a pit well guarded from the weather.

Next season the roots should be planted out in the common form, which, however, should be of a dry, sandy, and friable nature, and the cultivation should be carried on in the ordinary manner. The potatoes will then arrive at their full size, when their distinctive properties can be ascertained; and whether only those of the former quality or any new varieties of a better kind are thus procured, it will be found that those grown from seed will continue for several years to yield a larger return than those planted in the usual way, as well as to be more free from the destructive disorder called the "curl."

Besides what we have here stated regarding the ignorance which prevails respecting the seed of the potatoe, among persons who only see the roots upon their table, it is not improbable that many of those who are conversant with rural affairs are yet unacquainted with the extensive uses to which it is applied when manufactured into flour; for the public are not aware that it is not only very generally mixed by bakers in our bread, as well as made into starch, but that the substances commonly sold in the shops as tapioca, arrow-root, and various other farinaceous compounds, are in many instances formed of that alone. The bakers are thus accused of adulteration; but the fact is, that when only a moderate quantity is employed, it improves the lightness of the bread, as well as that of all kinds of pastry; and in Paris where the bread is well known to be of superior quality, upwards of 40,000 tons of potatoe are annually converted into flour. When manufactured upon a large scale, means are necessarily resorted to for the reduction of labour, the process of which it is unnecessary that we should describe; but when prepared for family use, the mode may be described as simply pulling off the skin, together with the eyes or any spot by which the root may be discoloured, and then rubbing with a strong, rough-holed iron grater, by which means it will be converted into a soft, watery mass, and is to be thrown into a tub of cold water. It should be then well mixed with the hand; after which it should be poured through a drainer, to remove any coarse fragments of the potatoe which may be accidentally present.

After being allowed to remain for some time, until the slower is completely fallen to the bottom, the water is to be carefully poured off, and the deposit in like manner subjected to repeated ablutions of cold water, which will gradually dissolve all the soluble matter of the root, and must be persisted in until the water, which was at first turbid, becomes quite clear and transparent, some time being of course allowed to elapse between these operations that the flour may subside completely to the bottom of the tub. It is completely insoluble in cold water, and when perfectly white and pure, forms a consistent mass, which is then spread out upon a cloth or other contrivance for drying it; and by rubbing it with the hand as it dries, it falls down into a fine impalpable powder, constituting the potatoe-flour. If kept in a dry place, this may be preserved for any length of time; and from the commencement until the termination of the process, the operation may perhaps occupy a week. When used in the manufacture of bread, it should be mixed with a considerable portion of rye, or wheaten flour; but a very palatable loaf may be formed with about one-third potatoe-meal, and two-thirds of that of wheat. Thus it is stated in a late number of the 'Bulletin des Sciences Agricoles,' that 4½ lbs. of the former and 10½ lbs. of the latter produce, as nearly as possible, 28½ lbs. of bread, or six full weight quarter loaves. The leaven is prepared in the usual manner; but the dough required to be rather more kneaded in order to make it rise. The same account further says, that the dough is divided into portions not larger than 6 lbs., which are baked in small pans. The oven is left shut for a quarter of an hour, after which it is partially opened for some time; and when the bread has had sufficient time to bake well, it is removed. In half an hour it is again placed in the oven, and allowed to remain an hour, the door being left open during the time; this second bak-

ing, it is to be observed, being of great importance. The bread made in this manner is described as being of excellent quality, and may be kept for eight or ten days without any apparent alteration. Now, according to all common calculation, the proportion of household bread, made from any given quantity of wheaten flour, is as four to three, consequently 10½ lbs. would only yield at the most 13½ lbs. of bread; yet we here find that by the admixture of 4½ lbs. of good potatoe meal, an increase is obtained of 11½ lbs.

"Puddings made of potatoe flour closely resemble those formed of arrow-root; and a very nutritious article of food for individuals of every age, but particularly of that of childhood, or persons of weak digestion, may be prepared in the same manner as *blanc-mange*, in the proportion of one large cupful of the meal to eight of milk, the flour being well mixed up with a spoonful or two of cold milk before it is put on the fire to boil, and afterwards allowed to cool. If the juice of any acidulous fruit, such as raspberries, currants, or especially cranberries, be employed instead of milk, a jelly is also thus formed which will be found an elegant and agreeable appendage to the table. One word may also be added to notable housewives upon the essential point of boiling potatoes; they should be chosen as nearly as possible of the same size; and, if very large, they should be cut into halves or quarters. They should be put into an iron pot, with a good handful of coarse salt; and the water which should be quite cold should not be allowed to quite cover them, nor should the lid be closed. When about half done, those at the bottom should be removed to the top; and when the whole appear completely done, the water should be instantly poured off, and the potatoes left in a napkin, within the pot, by the side of the fire. The boiling of those of a moderate size generally takes about three quarters of an hour; and their being done to the heart can only be ascertained by thrusting a fork through one of them. Cooks generally follow one rule; either peeling them or boiling them in their jackets; but this is wrong; for some sorts are better in their skins, and others peeled, and the difference can only be ascertained by experience."

Though I would be sorry to see potatoes come into that general use as human food in British America, which they have done in Ireland, yet the root is one of the most profitable that can be cultivated, and may, constitute a considerable proportion of human food, properly prepared, and with other nutritive food. To the settler in the forest, the potatoe will be invaluable, and the very best vegetable or crop of any kind that he can cultivate for the first few years. He will derive a most certain and valuable product from them in every way, for his own use directly, and for manufacturing into butchers' meat, flour, &c.—*Evans*.

MUCK—A GOOD ABSORBENT OF THE WASTE FROM THE TAN-YARD.—*Mr Editor*.—Knowing it to be a satisfaction to you to learn of any benefits resulting from your labors, I herewith send you the results of some experiments which I have been induced to make by the cry of "Muck! Muck!" which your predecessor and yourself have sent through the community in the columns of your most valuable paper.

In the first place, Sir, I am a farmer, and like many others, though little of enriching my farm from my tan-yard, or, at least, to that extent that I am now enabled to do, till, as I before said, I was induced to try some experiments in muck.

I caused to be dug out directly below my tan-house, and where my limes, drenches, and water-vats were drawn, a hole sufficiently large to hold say 30 or 40 cart-loads. This I filled with muck or peat, letting it remain say eight or ten weeks, in which time it became well saturated with lime, and had accumulated a good portion of animal matter from the hides: I then cleaned it out, overhauled it, and mixed it well together, letting it remain from fall till spring; I then mixed it in equal parts with stable manure, and used it in planting corn, potatoes and squashes, and the result was a larger crop of corn than had been raised in my neighbourhood for many years, being little short of 100 bushels of shelled corn to the acre. I have also used it with equal success in top-dressing for grass.—*N. E. Farmer*.

Prepare cattle yards for the manufacture of manure on as large a scale as practicable—provide plenty of straw for litter—remember, plenty—and that is a great deal; and if possible, cart on your manure yards a large quantity of swamp muck; or if that cannot be had, simple earth, to mix with the other manure. The labor will be well repaid.

FOR THE SICK AND CONVALESCENT.

BARLEY WATER.—Take two table-spoonfuls of pearl barley, wash very clean, and add to it a pint of boiling water; let it boil for five minutes, pour off this water and add two quarts more boiling water; reduce it to two pints and a half and strain. This is simple barley water; it may be made very pleasant by adding the following: one ounce of figs, two ounces of raisins, stoned, quarter of an ounce of liquorish; boil it till reduced to a quart, and strain.

TOAST AND WATER.—This article, simple as it is, is rarely well prepared. Cut an upper crust of bread as thick again as it is usual for toast; brown it carefully, but see that it be not burnt, smoked or black; pour on as much water as is required, and cover the jug till cold. A slice of thin cut orange or lemon peel infused with it, improves it greatly; it should be made early in the day during summer and placed in the sun, when it may be drank with impunity.

MUTTON BROTH.—Put into a two-quart saucepan one pound of mutton chops, cleared from fat, one onion, half a dozen corns of black pepper, and three pints of cold water; let it warm gradually; when it boils, skim it, cover the pan close and set it over a gentle fire till the chops are cooked, which will be (if the meat is not too fresh,) in three quarters of an hour.

BEEF TEA.—Cut a pound of lean beef into thin slices, put it into three pints of cold water, set it over a gentle fire where it may become gradually warm, let it be well skimmed, cover the saucepan close, and boil gently for two hours, strain it and let it stand to settle, then pour it off clean. One onion, a few peppercorns, and a little salt may be added if required.

EGG CREAM.—Take the yolk of an egg, with a desert-spoonful of cream, or new milk, and if convenient, add two drops of oil of cinamon; this will form a mixture sufficient to serve three people to mix with their tea; for cream being chiefly the oil of the milk, and the yolk the most nutritive part of the egg, they are both lubricating and nourishing. The oil of cinamon is cordial and tonic.

The above has been recommended in diseases of the lungs, where there is difficulty in breathing, with a short dry cough, especially after eating or motion; also in fits of hectic fever, towards the evening, and night perspiration.

MILK GRUEL.—Take a half tumbler of thick gruel, and the same quantity of new milk, both lukewarm; mix together and let the patient drink it. This, where the debility is extreme, will sustain the powers of nature when nothing else can be taken.

MUCILAGE OF GUM ARABIC.—To three ounces of gum arabic, add a pint of boiling water, and when perfectly dissolved, strain for use. The usual dose is a wine-glass full twice or three times a day; it is usually to administer some medicines in, or to allay the tickling of coughs.

GLOUCESTER JELLY.—Take rice, pearl barley, hartshorn shavings, and eringo root, each one ounce. Simmer in a quart of water till reduced to half, and strain; a tea-cup full should be made warm, and given frequently during the day; it will support the strength when animal food cannot be taken.—*Magazine of Domestic Economy.*

DR. FRANKLIN'S CODE OF MORALS.—Temperance—eat not tofulness; drink not to elevation. Silence—speak not but what may benefit others or yourself; avoid tiffing conversation. Order—let all your things have their place; let each part of your business have its time. Resolution—resolve to perform what you ought; perform without fail what you resolve. Frugality—make no expense, but to do good to others or yourself; that is, wasting nothing. Industry—lose no time; be always employed in something useful; keep out of all unnecessary action. Sincerity—use no hurtful deceit; think innocently and justly; and if you speak, speak accordingly. Justice—wrong none by doing injuries, or omitting the benefits that are your duty. Moderation—avoid extremes; forbear resenting injuries. Cleanliness—suffer no uncleanness in the body, clothes, or habitation. Tranquility—be not disturbed about trifles, or at accidents common or unavoidable. Humility—imitate Jesus Christ.

CHOP AND MEAL.—No farmer or planter should feed his corn, oats, or rye, except he first have it ground into chop or meal. When so prepared it not only goes farther, but is infinitely more nourishing to the animals fed upon it.—*Am. Farmer.*

SALTING HORSES.—A curious fact is mentioned in Parker's *Treatise on Salt*:—"A person who kept sixteen farming horses made the following experiment with seven of them which had been accustomed to take salt with their food. Lumps of rock-salt were laid in their mangers, and these lumps, previously weighed, were examined weekly, to ascertain what quantity had been consumed; and it was repeatedly found that whenever these horses were fed on old hay and corn, they consumed only from 2½ to 3 oz per day, but that when they were fed with new hay, they took 6 oz per day." This should convince us of the expediency of permitting our cattle the free use of salt at all times, and it cannot be given in so convenient a form as rock-salt, it being much more palatable than the article in a refined state, and by far cheaper. A good lump should always be kept in a box by the side of every animal without fear that it will ever be taken in excess.—*Farmer's Cabinet.*

WONDERS OF CULTIVATION.—There is scarcely a vegetable which we cultivate, that can be found to grow naturally. Buffon has stated that our wheat is a fictitious production, raised to its present condition by the arts of agriculture. Rye, rice, barley, even oats, are not to be found wild, that is to say, growing naturally in any part of the earth; but have been altered by the industry of man from plants not now resembling them, even in such degree not to enable us to know their relations. The acid and disagreeable *apium graveolens* has been transformed into delicious celery, the colewort, a plant of 7 leaves, not weighing altogether half an ounce, has been improved into cabbage, whose leaves alone weigh many pounds, or into the cauliflower of considerable dimension, being only the embryo of a few buds which in their natural state would not have weighed as many grains. The potato, again, whose introduction has added millions to our population, derives its origin from a small bitter root, which grows wild in Chili and Monte Video.

COUNTRY EXCURSIONS.—There is much truth and good sense in the following extract from Curtis on Good Health. "A short trip into the country, even for a single day, is exceedingly beneficial, by diverting the mind from the ordinary objects of contemplation and removing from it, for a time, that load of anxious cares, which if suffered too long to remain, destroys its elasticity.—At least once a year, a jaunt of a week or two, should, if possible, be taken by every one; the communications by land and water to every part of the country, are now so abundant and economical, that there are few, indeed, who could not afford it if they wished; in the execution of such expenditure would probably be the means of saving a large sum, by improving the health, and enabling men to engage in their various occupations of life with greater energy."

THE DOUBLE-HAND RAKE.—This machine being nearly allied to that for mowing, we give it a notice in this place. It has been introduced, thoroughly proved, and several of them are in use. It consists of a very light arrangement of frame-work, about ten feet long, with handles at each end, by which two take hold of the machine and walk abreast, allowing a part of the rake to slide on the ground, which gathers the hay very clean, and readily deposits it, the same in *winrows* at the option of the managers. This rake is much more economical than the horse where the hay is light; and ordinarily two men can, with one of these rakes, gather the hay from an acre of land in twenty minutes.—*New York Mechanic.*

TRANSPLANTATION OF TREES.—This is the most suitable period for setting out an apple orchard or other fruit, as well as ornamental trees. Whoever undertakes to do either, should do it well, as the thing is like beginning right. Before you commence a work so important as that of planting out an orchard, be sure that your posture is a suitable one; that your soil is in good heart; do not forget, if it has not been done already, to lime it, and to plant your trees properly.—*Yankee Farmer, Nov. 4.*

TO CURE A BURN.—A lady in Kentucky gives the following receipt for a burn:—Take a table-spoonful of lard, half a table-spoonful of spirits of turpentine, and a piece of resin as big as a hickory nut, and simmer them together till melted. It makes a salve which, when melted, may be applied to a linen cloth and laid over the burn. If immediately wanted, spread it on the cloth soon as melted—it will very soon cool. I have seen it applied after corroding effects of chemical poisons, after a foot has been burned by boiling sugar, after severe scalds, and in all cases successfully.



THE COLONIAL FARMER.

HALIFAX, N. S., DECEMBER, 1841.

TO THE FARMERS OF NOVA SCOTIA.

The present is the sixth No. of our paper. Half a year has elapsed since the commencement of the work, and we have great satisfaction in locking back upon the character of the numbers issued, and on the degree of patronage and support it has received. It is our wish to go on improving, and our intention to leave nothing undone on our part to supply to the Farmers of Nova Scotia a stream of useful and valuable information. While we endeavor to make the most of the means within our reach, it would be very satisfactory if those who are immediately engaged in rural pursuits would exert themselves as they might to add to the interest of our pages, and generally to extend our resources. We desire at this time to call their attention to a few points, which we conceive to be well worthy of their consideration :

1st. *To the extreme cheapness of our paper.*—Is there a Farmer in all Nova Scotia, above the condition of a mere pioneer, who cannot afford Five Shillings a year for the useful hints and valuable information contained in our little volume? Five Shillings a year! the price of one gallon of rum—of one pound of tea—of 50 segars. Is it too much for the monthly counsel and instruction afforded? A bushel of grain—a Turkey—a pair of Geese, pays for it—and so can read the Nos. without learning something which will enable him to save ten times as much? The difference between having a hog or a sheep of the right breed—seed of the best description—a knowledge of proper rotations, and of the best mode of preparing composts for particular kinds of soil, make all the difference perhaps of hundreds of dollars to each Farmer every year—the difference between a profitable and an unprofitable Farm—between poverty and independence. We think, then, that we are not in asserting that no Five Shillings that an Agriculturist spends can be better invested than that which he lays out in the purchase of the Farmer. We believe that a great many of our friends are impressed with this belief. If so, may they not set upon it, by showing the back Nos. to friends and neighbours—explaining the character and utility of the work—obtaining Subscribers—remitting the advance, and ordering copies? If those who are sincerely anxious to elevate their order, by adding to its intelligence, would do so, we should very soon circulate as many Nos. of our publication in each County as are now read by all the Farmers in the Province. Is not this “a consummation devoutly to be wished?” We think it is, and we believe that if Five Thousand Copies of the Farmer were regularly read throughout Nova Scotia, in a short time Fifty Thousand Pounds would be annually saved or added to the amount of our Agricultural production. No man can estimate the value of even a single judicious suggestion, pervading the great mass of a people engaged in an occupation to which it may

be at once applied, in the saving of time—the increase of stock—or the abandonment of some costly or injurious practice. A little exertion would make The Farmer a household volume. Let, then, for the next month or two, the question be, “Do you take the Farmer?” and let a simultaneous and active canvass swell our circulation to what it ought to be. We are quite willing to pay back the Five Shillings to any man who will declare, at the end of a twelvemonth, that he has not got the worth of his money.

2d. *Agricultural Reports, from County or Township Societies,* should be more regularly forwarded. These often convey valuable information, and they serve, by shewing what is doing in particular districts, to excite and keep alive an emulation spirit in all. Besides, reports of experiments, if regularly published and preserved, serve to show what has been done, and what principles have been proved to be applicable to this Country. The knowledge of other Countries is valuable, but diversity of soil and climate always makes a difference in results, sufficiently important, to make our own experience worth preserving as a corrective to theories coming from elsewhere.

3d. *Good Essays upon Agricultural Themes,* and stirring appeals from intelligent men, engaged in the honorable labors of the plough, addressed to those who are less alive to the real dignity of their occupation, would do a vast deal of good. We have our eye upon at least a dozen individuals, who could throw off a few papers each, which would materially add to the interest of our pages, and produce a striking effect on the farming classes. A little exertion is all that is required. Let them shake off dull sloth, and bestir themselves in this good cause.

There is nothing that gives a greater stimulus to enterprises such as ours, than the active sympathy and assistance of intelligent men, who can estimate our position, and take comprehensive views of the good that might be done if the most was made of it. We are truly grateful to those who have done their best to aid us, but are anxious that others, who have the ability, should come and do likewise.

Extract of a Letter from a Gentleman at Digby.

“The crops here are mostly housed. Potatoes are light, below an average crop. Hay is good. Wheat has done well, with few exceptions. One of our Society imported from Boston last spring two bushels of the Italian Spring Wheat, which, although sowed late in May, was a good crop, and free from Rust. I had sowed some wheat, which I bought in Halifax two years since, ten days earlier. This, although growing within a hundred rods of the Italian Wheat, was completely spoiled with rust. Some of the Black Sea Wheat has done well, although it was sowed late in May. I am glad to see that our farmers in many parts of the country are making exertions to collect the sea manure and mix it with swamp mud—many large heaps of this compost are forming. This employment, I trust, will be found more to their advantage than building vessels for the Merchant's of St. John; as that employment, in most cases, left nothing but chips and destruction of the timber on the wilderness lands.

The shore fishery in many places draws off too many that are engaged in Agriculture. The season that ought to be employed in cultivating the soil and putting in the seed, is taken up in building wears and preparing for the fish, and often with but poor returns for the time and labor spent. The farmer in Nova Scotia, if he wishes to advance, should at all times be attentive to his occupation. The chert seasons will not admit of his being a farmer one day, and a fisherman the next.

From the New York Evening Post.

IMPORTANT DISCOVERY IN AGRICULTURE.

In the *Phalange*, a Fourier paper published at Paris, September 8th, a novel discovery is described, which, if true, will work a great change in an important department of agricultural labor. It is communicated to the Paris print by Chase Poillard and M. Bernard, who date their letter at Brest, August, 1841. It appears that while they and some of their friends, who farm their own estates, were engaged in conversation on the subject of agriculture, it was observed by one of them that that branch of industry was suffering more from the want of capital and enterprise than any other, and that nothing was to be done without manure, which was every day becoming more scarce and expensive. This remark led to an inquiry into the properties of manure, and particularly as to what provision nature had made in those uncultivated regions where there seems to be a vigorous and luxuriant growth, without artificial assistance.

"In observing nature unassisted, or unthwarted rather, by the hand of man, in vegetable re-production, it is found that when the seed is ripe it falls upon the ground, and then the plant which has produced it sheds its leaves, or falls itself upon it in decay, and covers and protects it from the weather until generation has commenced, and the young plant is able to grow up in health and strength and full development, to recommence the same routine of seeding and of reproduction.

"From this it follows that, in nature, every plant produces its own soil or *humus*, and that the earth only serves to bear the plant, and not to aid or nourish it in vegetation. The nourishment of plants is thus supposed to be derived from *air and water, heat and light*, or electricity, in different proportions, adapted to the different varieties of vegetable nature."

With this general notion in their minds, and considering wheat to be, in present circumstances, one of the most important vegetable substances, they agreed to try experiments, and in October last undertook the following operation:

In a field which had been sown with rye, because the land was deemed too poor for wheat, a plot of twelve square yards, untilled and left without manure, was carefully strewed over with the grains of wheat, and wheaten straw was laid upon it closely, and about one inch in thickness. In a garden, also, which had been neglected several years, a few square yards of earth, were trodden over, and the surface being made close and hard, some grains of wheat were scattered on this hardened surface, and a layer of straw one inch in depth was carefully laid over it, and left, as in the former case, to take its chance without ulterior attention. And, in order to make doubt impossible concerning the mere secondary functions of mineral earth in vegetable reproduction, twenty grains of wheat were sown upon the surface of a pane of glass, and covered with some straw alone, as in the other case.

The germination of the seed was soon apparent and most healthy in development. "The winter has been rigorous" say these correspondents, "for this part of the country, and the earth has sometimes been frozen in one solid mass to a depth of six inches in the garden where the wheat was sown, and this has happened several times during the winter, to the great injury of many plants and even the entire destruction of some; while the spots protected by the straw were never thoroughly congealed, nor were the grains of wheat, though lying on the surface under the straw, at all affected by the cold. During the spring excessive droughts, prolonged, and several times repeated, have prevented vegetation on the common plan from flourishing in healthy progress, while our little spots of wheat have hardly felt the inconvenience of excessive dryness, for the earth, protected by the straw, has never been deprived entirely of moisture, and our blades of corn were flourishing when all around was drooping and uncertain. To conclude, then, we have thoroughly succeeded in our practical experiment, and the wheat produced is of the finest quality. The straw was more than six feet, and in the ears were 50, 60, and even 80 grains of wheat of full development, the admiration of all who saw them, and particularly those which grew upon the pane of glass, and which were quite as healthy and as large as those which grew upon the common earth. It must be observed also that there was not the smallest particle of earth upon the glass, and that the plants were left entirely to themselves, without being watered or attended to in any way whatever from the time of sowing to the time of reaping.

The cause of this success they think may be explained in the following manner:

"Straw being a bad conductor of heat, and a good conductor of electricity, maintains the root of the plant in a medium temperature, and prevents the earth from being deprived entirely of moisture. The moisture of the earth, or the substratum, being continual, facilitates the gradual and constant absorption of carbonic acid gas from the surrounding atmosphere, and hydrogen and azotic, the chief elements of nourishment to vegetables, are economized in regular supplies where they are constantly required, and pass in combination with oxygen from the roots up to the stems and branches of the plants in which they are assimilated, and oxygen thrown off in exhalation from the leaves. The straw decays but slowly, and thus furnishes its substance by degrees to young plant in due progression and proportion, (such as the quinos ingredients, for instance, of the pod or capsule,) so that decomposition of the straw corresponds to the four phases of maturation in progressing from the *saccharine* to the *alcoholic*, *acid* and the *putrid* states, unanalogous to those of *infancy, bud, youth, and seeding* of the plant.

"We observe that our blades of wheat have but a very few roots, and those are short and hard, something like a bird's claw; this agrees with the remarks of Mons. Raspail, who states that most healthy plants in ordinary vegetation have the best expanse of roots and fibres.

"Another important observation, is, that weeds and parasitic vegetation are prevented by this method, for the straw chokes every other plant but that of its own seed. Many other interesting observations might be made on these experiments, but we refrain from obtruding on your readers; but if any of them require further information on this subject we shall willingly afford them every facility. The importance of the general result will easily become apparent without further comment, and a revolution in the present modes of agricultural labor is a necessary consequence of this discovery. No tillage will now be required, any artificial stimulants in manure and other more or less expensive combinations with regard to soil and culture. In fact, it would be tedious to enumerate the various advantages that may result from this casual experiment, and therefore we proclaim simply to the world that all may profit by it."

As this experiment can be easily tried, we hope some of our farmers will put it to the test, and communicate the result. We shall certainly try it on a small seven by nine lot of ground, which is the largest that is vouchsafed to a dweller in the city.

Parsnips and White Orris may be sowed late in the fall, or any time in the winter, when the ground is thawed an inch deep. It will only be necessary to make slight scratches in the mud soil and sow the seeds in them. The drills for Orris should be two feet apart—for parsnips two feet. The ground where the Orris is sowed should be covered with straw about three inches thick, leaving it a little more open over the drills than elsewhere. The straw should not be removed in the spring till the ground is green and weedy. This plant vegetates in very cold weather, springing up before the earliest of our native plants, yet in open ground scarcely appears to increase for the first month, but where the ground is covered with straw, with a slight opening over the drills the leaves will be two or three inches broad by the time that the second leaf is barely perceptible on the uncovered ground. If weeds do not appear there will be no occasion to be in haste to remove the straw, for the winters frost will loosen the ground, and will continue loose for a long time if the straw is not removed. When uncovered it soon grows hard, and must be worked. Frost is the principal cause that makes winter wheat grow better when the surface is covered with straw. It keeps the ground in the mellow state to which it was brought by the frost, for a long time, and keeping the ground light in any way will increase the crop. Wheat or barley sowed in drills ten inches apart, and with a forked hoe two or three times, yields more than when sown broadcast. We always associate the idea of barrenness with long moss that covers the surface of bogs too wet to produce wheat. A coat of this barren moss spread two inches thick upon the mowing ground in the fall, will generally make the following

of grass one-fourth larger. It prevents the ground, loosened by the frost, from growing hard, keeping it in some measure in the state of the ground in the forest, which being always covered with dead leaves or moss, and overshadowed by a close vegetation, retains its lightness through the whole summer, while the open fields become very hard and compact.

Where straw is plenty, it is useful to give a slight covering to the parsnip ground, for the summer is rarely long enough for this root, and the covering will bring it forward. When the straw is removed the ground should have a sprinkling of manure, and be worked with a fork between the drills. Parsley and Celery may be sowed also in winter or late in the fall, with a slight covering of straw. They should always be sowed in drills, otherwise it would be difficult to give the ground the necessary culture the following season.

Carrots, Beets, and Cabbage Plants, sowed late, and covered, sometimes succeed, but not in every season. Seeds of Apples, Pears, Plums and Cherries, should always be sowed in the fall, with a dressing of wood ashes. Asparagus berries should also be sowed in the fall.—ED. COL. FARMER.

THE GRAND PRINCIPLES OF BREEDING.

The object of the sheepmaster is to raise and to retain that animal which will pay best for the consumption of its food. With the breeder of cattle this is a very simple affair—he selects and cultivates that animal which will attain the greatest maturity and weight in the shortest time, and on the least quantity of food. The dairy-man wishes to add another quality to the aptitude to fatten, namely, the yielding, a ml for a considerable time, a large quantity of milk. The sheepbreeder also derives his profit from two sources, the early maturity of the carcass, and the quantity and useful properties of the wool. Both will occupy his attention; the first in every case, and as his grand object; the second as valuable but regarded more as a subsidiary.

How shall he attain these objects? He looks carefully over his flock, and he observes that some of his sheep—the food and the general management being the same—fatten more quickly than others. There is the same attention paid to all, but the profit is abundantly more from some than from the majority of their companions. He is anxious to account for this. He compares these sheep with some of their fellows, and he observes that there is an evident difference of conformation, a fineness of bone, a roundness and compactness of form, a condensation of substance, and a beautiful proportion of every part. He studies this, and he finds that there is more or less of this conformation in every sheep that materially outstrips his fellows. He inquires farther, and if he has employed different rams, the one that possesses most perfectly this peculiarity of form, and its accompanying aptitude to fatten was the parent of these promising sheep, or their dam had these points in considerable perfection. He now begins to form some notion of the kind of animal that the profitable sheep should be; and he has living proof that these valuable properties may and will descend to the offspring.

His pride and his interest are involved, and he examines these flowers of his flock with still closer attention. He finds that, in the handling they present as great a difference to the feeling as they do to the eye. There is a softness, a springy elastic softness, in distinction from the hard, harsh, unyielding nature of the skin and the texture immediately beneath it in others, which once impressed on the mind can never be forgotten; and he associates this with the certainty of early maturity.

Having satisfied himself with regard to these things, he dismisses the ram that does not exhibit these qualities, or that fails in getting lambs that exhibit them; and the ewes that do not approach to the beau-ideal which he has formed in his own mind, or whose lambs are inferior in appearance or in thriftiness. He fattens these and sends them to the butcher. He collects together the lambs as soon as their form and qualities begin to develop themselves—a little experience will enable him to judge accurately of this at a very early age—and without hesitation he discards those that are not up to the mark, whether ram or ewe-lambs. He puts by a few of the very best of the males for a second examination at no very distant time, and every faulty one is selected from the ewe-

lambs, and prepared for the butcher as quickly as may be. In this way the flock is systematically and rapidly improved, and the breeder is well repaid for the attention which he has given to this important object. *If his flock is large he will find in this principle of selection every thing that he can want.*

There is one point more, the importance of which he cannot overrate—he should never preserve a lamb that has an evident and glaring defect. In proportion as his flock improves he should regard this as a rule that admits of no exception, for the principle that “like produces like” extends as powerfully to the defects as to the excellencies of the animal. The progeny infallibly inherits the defects as well as the excellencies of the parent; and no improvement in a good point, already possessed to a considerable extent, can compensate for the introduction of an obvious blemish.

On this principle of selection the breeder will continue to proceed, if his flock is tolerably large, and he will even be jealous of the introduction of a foreign breed, the good qualities of his sheep, transmitted from one generation to another, are no longer accidental circumstances. They have become a part and portion of the breed, and may be calculated upon with the greatest certainty. They constitute the practical illustration of the term *blood*. It would be long ere the good qualities of a stranger would form an identical portion of the sheep; and no animals will elsewhere thrive so well, or improve so rapidly, as on the pastures on which they and their forefathers have, generation after generation, been accustomed to wander.

But after a while, with a considerable degree of certainty in a small flock, and too frequently in a larger one, the sheep will continue to arrive early at maturity, and to fatten as kindly as before, or even more so; but they are evidently decreasing a little, and yet only a little in size. They do not bear the severity of the weather quite so well, and perhaps they are somewhat more subject to disease. The farmer will do well to take warning. He has been breeding too long from close affinities; and he must introduce a little different and yet congenial blood. He must select a ram from a soil, and kind of food, not dissimilar to his own, although at a distance as great as convenience will permit—with points as much resembling his own sheep as may be—quite as good as those in his own flock—superior if possible in some points, and inferior in none, and he must dismiss his own ram for one year, and make use of the stranger. His purpose will be completely answered. He will have infused a tone and vigor among his sheep—they keep their propensity to fatten, and they re-acquire that health and hardness which they used to exhibit, and the farmer is enabled to go on satisfactorily for a certain number of years; when experience will tell him that a stimulus, in the form of a little foreign blood, is again wanted. Thus is illustrated that axiom with regard to all our domesticated animals—“Selection with judicious and cautious admixture, is the true secret of farming and improving a breed.” The errors to be avoided are, too long continued and obstinate adherence to one breed; and on the other hand, and even more dangerous, violent crosses, in which there is little similarity between the soil, the pasture, or the points and qualities of the animals that are brought together.—*Fouatt*.

The directions for forming a good breed of sheep, will apply equally to cattle, designed, like the short horn Durham, for the butcher. For this purpose small bones, large muscles, and quick growth are necessary. By constantly selecting the best, both for shape and thriving, for breeders, we may form *blood* cattle from our present stock, but much time will be required to make new breeds equal to those already formed in Britain.

To take advantage of imported bulls we should put no cows to them, but those that usually carry flesh better than the average of our cattle, and that are otherwise well formed, if we wish to breed for the butcher.

When good milkers are wanted, a form different from that of an animal that fattens easily should be chosen for a breeder,—The head, neck, and legs can hardly be too light, the body should be large, and deeper behind than before, and the hind quarters not running far forward. If the back should be flat and broad, and the body round like a barrel, the cow will probably give a large quantity of rich milk, but should the cow be flat sided, with a high

sharp ridge behind the shoulders, she may, if well fed, give a great quantity of milk, but not of a good quality for butter, and it will not be easy to keep her in flesh.

The Hereford breed are supposed to produce the best working cattle in England, and sometimes, very good milkers. If working cattle are wanted, the kind of cow recommended by Virgil for this purpose would be excellent, combining great strength with great spirit.*

He limits the period for breeding between the ages of four and ten years, observing that there will still be some cattle of a bad form produced, and that it will always be necessary annually to examine your herd, and sort out those that are to be retained for breeders.

Cattle nearly akin should not be permitted to breed together when wanted for work, because for this purpose both strength and spirit are necessary, and would, undoubtedly, be diminished by breeding between near affinities.—ED. COL. FARMER.

Stables for cattle and (farmer's) horses, should be airy, never so close that it will not freeze in them in severe weather. I have heard an old Farrier observe that "it was very fortunate that Gentlemen wished their horses to wear their summer coat of hair the whole year, for they were such hardy animals, that if they were well fed, reasonably worked, kept in cool airy stables, and never allowed any other clothing than the coat of hair God had given them, the Farriers would starve, for there would hardly ever be a sick horse."

When, in cold weather, you are obliged to leave your horse for a considerable time standing in the wind, after being heated by hard work, throw a rug or great coat over him.—When you are obliged to travel in a cold rain, cover him with an oiled cloth, but never put a rug on him in the stable; leave that for those who can afford to pay the Farrier. I have seen many of the old breed of French or Nova-Scotian horses, who kept in good health, and tolerable flesh, through the winter, with no other shelter than a fir thicket, and no other food than what they collected for themselves, gnawing the short grass, when the ground was bare, and picking the hay from the dunghoops, when it was covered with snow. I have known a man who made a stable for his cows by digging a kind of cellar into a steep sidehill, walling three sides, and banking them with earth, the lower side only being boarded. When the cold weather came on, he observed with great satisfaction that his cows were very comfortable, that so much heat came from their bodies that potatoes did not freeze in his stable, but at midwinter he complained that some of them did not eat their hay well. In the spring in spite of very careful feeding they were all weak, and miserably poor, he condemned the stable, built a very slight cold one adjoining the barn, and the next winter his cattle thrive well.

T. S.

From the writings of the old Veterinary Surgeons, we learn that the Moors, on the Barbary Coast, had the habit of firing the young colts of their finest horses, upon the Hocks and Pasterns,

* "A frowning cow, with a rough head, a large neck, a dewlap reaching from the chin to the legs—an enormous length of side, every part large—the feet and ears shaggy, nor should I be displeased if she were marked with spots, and white, and should refuse the yoke, and sometimes fight fiercely, with a face resembling the bulls, and a proud, lofty bearing as she marched on, brushing the ground with the tip of her tail."—*Georgics*.

This description never fails to bring to my recollection the huge bones and muscles of, by far, the strongest bull I have ever seen, whose "enormous length of side" was caused not by length of body but by the uncommon size of the shoulders and hind quarters.

as a preventive of Spavins and Ringbones. This was done by burning light parallel razes with the firing iron within a quarter of an inch of each other, and then crossing them with others, like chequer work.

As we have in the Province many half bred horses, with excellent wind and spirit, but with limbs so weak that they are remarkably exposed to the above-mentioned complaints, perhaps it would be advantageous to introduce the practice here for this breed. It is probable that it originated from the frequency of these complaints among their full blooded colts, whose uncommon spirit would stimulate them to exert their utmost strength in their play.

Firing, in the manner above described, and putting a blistering plaster over it, the following day will often remove a spavin or ringbone in a young horse—but it is best, generally, if the swelling is recent, to try blistering first, because it does not leave a mark like the firing iron. The first blister will rarely have any perceptible effect, but frequently the second will lessen the tumor, and when this happens, by repeating the blistering it can almost always be removed.

T. S.

There are certain practices which we have been taught by our fathers, as they were by their fathers, and which are thought to be good, upon authority, although we have never by any experiment ascertained their utility. Many believe that it is proper to plough all kinds of land in the fall, and there are some who manure and dig their gardens in the fall. It would be useful to those who follow these practices to try the following experiments. Chuse a piece of stubble ground that is somewhat weedy. Plough the one half, leaving the other to be ploughed in the spring, when both pieces should be planted with potatoes *without* manure, let them be taken care of in summer in the usual manner, and note carefully the produce of each. Plant also with potatoes, with equal portions of manure, two similar tracts, one ploughed in the fall, the other the following spring, and note the produce, observing also should there be a drought, or too much rain, which is most injured by the unseasonable weather.

T. S.

OMISSION.—In the able Essay on the Culture of Wheat, written by CHARLES W. H. HARRIS, Esq., of Horton, published in our 4th No., the sense of one sentence was destroyed by an omission of several words. On the 2d page the sentence commencing at the end of the 6th line should read thus—"The difference of product in these cases is so striking, as to make it evident that very much depends upon the kind of wheat which is sown, and the reason of a greater quantity of wheat now produced in England, than formerly, is thought to be attributable to the greater attention given to the selection of seed from the best and most prolific varieties."

MINUTES OF THE CENTRAL BOARD.

At a Meeting of the Central Board of Agriculture, held in the Province Building, September 23d, 1841.

Present—The Hon. James M'Nab, William Young, Mathew Richardson, John E. Fairbanks, Thomas Williamson, and Edward Allison, Esquires.

Read the annexed Letter from George R. Young, Esq. and the accompanying Invoice, numerous Letters to and from Mr. Young, while in England, and other papers on the subject of the purchase and shipment of the Stock for the Board and County Societies.

The Chairman, Vice Chairman, and Treasurer undertook, at the request of the Board, to look out for a suitable place for the Stock expected from London and Boston, and for a proper person to take care of them on arrival.

After discussing the most eligible place and conditions of sale, it was determined to sell at Public Auction, to the highest bidders, on Wednesday the 27th October, at Studley, the Canadian Stallion "Montreal," the three short horned Durham and Hereford Bulls, and two Heifers, the Cheviot, Southdown, and Leicester Rams and Ewes, and the Essex, Berkshire, and Suffolk Pigs, expected in the Prince George from London; also the six Boars and six Sows of the improved Berkshire and MacKay breed, ordered from Boston; and the Secretary was requested to prepare an Advertisement accordingly.

The Vice Chairman agreed to draw suitable bonds for preserving the Stock, and keeping them in the Province, conformably to the Act.

Messrs. M'Kinlay's account for 200 copies of Jackson's Work on Agriculture, was ordered to be paid, as it is hoped that the remaining copies of this valuable Treatise will be absorbed by the Societies, on the terms offered by the Board, that is, a present of a copy out of its own funds for every one that is ordered.

Read Letters from James B. Holdsworth, Esq. a member of the Board, and from W. H. Lee, Esq. Secretary of the Digby Society, describing its formation and progress, which were highly gratifying to the Board; and assigned to it—being the only one in the County, and embracing members from all quarters, the full sum of £75.

Read a Letter from Mr. George E. Jean, the Secretary, W. Crichton, Esq. being the President, and Messrs. DeCarteret, Janvrin, Bellam, Brymer, and J. Morrison, N. W. Arm, the Vice Presidents of a Society formed on the 1st instant, at Arichat, for the County of Richmond. By the Resolutions passed at the Meeting, the annual subscription of a member is to be five shillings; and a Committee consisting of Messrs. Janvrin, Cowley, Turnbull and Woods, was appointed to frame Bye Laws. The Secretary was directed to communicate to the Central Board the proceedings of the day, and to state that the sum required by law was made up; and the sum of £50 was apportioned for the purchase of Sheep and Swine. It was stated also that a spirit of enquiry into the benefits to be derived from the establishment of the Society was prevalent in the community, and that in all probability the subscriptions would amount to double the sum required by law. The Board hailed with satisfaction this auspicious movement in the County of Richmond, but as it was not mentioned whether the sum of £10 or £20 had been raised, and it was doubtful how far the other sections of the County might acquiesce in this Society as the central one, the Board contented themselves with assigning to it in the meanwhile the sum of £50.

Read Letters from the Secretary of a Society proposed to be formed, and since organized at Musquodobit—from the Societies at Guysborough, Wallace, and Broadcove, and from Mr. Colin M'Viccar, and directed the answers to be sent thereto.

Read a Letter from Mr. Hudson to G. R. Young, Esq. informing him that the Board had been elected a corresponding Member of the Royal Agricultural Society of England.

Read a Letter from Mr. Simmonds, expressing a desire to become a corresponding Member of the Board, this gentlemen being one of the Editors of the Farmer's Encyclopaedia, and a member of most of the learned Societies in London.

The Chairman and Secretary were requested to address a letter of thanks to the Hon. Michael Tobin, Senior, expressing the gratitude of the Board for the pains he had taken in selecting and shipping the Canadian Stallion.

The Board then adjourned.

London, September 1st, 1841.

GENTLEMEN,

I beg leave to enclose you an invoice of the Cattle, Sheep, and Pigs, bought under the orders put into my hands, and trust that they will give you and the country satisfaction, for I assure you that the labour and responsibility entailed on me have been far greater than I anticipated, and difficulties have embarrassed me which I have not been able satisfactorily to surmount. I have endeavored, however, to complete the order according to your directions—to acquire the necessary information to regulate future importations, and I believe I will best complete the agency I was persuaded to accept, by placing these on record for reference at subsequent times.

On enquiry, both in London and Liverpool, I found it difficult to ascertain where a selection of the best stock of different varieties could be seen in any one location; and after being introduced to

the Council and Secretary of the English Royal Agricultural Society, I was earnestly recommended by them to attend their annual exhibition at Liverpool, where I would be able to see both the best animals and breeders, and to acquire such a knowledge of prices as would guide me in the expenditure of the funds. I accordingly went to Liverpool for that purpose, and I am glad to say that I succeeded to my own satisfaction in the objects I had then in view; and was enabled to form those connections, and to obtain that information which I trust may be turned to useful account in the future.

I refer to the invoice, for the selections I have made, and to each of the animals you will find a history of its pedigree. With the exception of one of the Durham Bulls, which cost £42 sterling, none of the other Cattle can be called the *very best* specimens of their kinds; and altho' they are fine animals, and are put in as moderate in price, they are not the animals I would have selected, had I not been limited as to price—not that I mean it to be inferred that they are not good in their kind—for I have the guarantee of Mr. Hobbs, who is one of the Council of the Royal English Agricultural Society, who supplied them. and of Mr. Forbes the agent employed by me in London, and who has for the last ten years been engaged in the exportation of Stock—both as to their points and pedigree, but in place of buying *young* animals, who are to grow up before their merits can be exhibited, I would have preferred to have sent full-grown and perfect specimens, in order that our farmers might at once have seen the value of attending to the principles of breeding which now prevail.

To give you some idea of the value of the best Bulls of the Short-horned or Durham breed I may say to you, that 300 guineas is not an uncommon price for a Bull reared by one of the first breeders. A Bull of 3 years old, whose progeny has been approved of, cannot be bought for less than from £120 to £150. Mr. Forbes shipped lately to N. S. Wales two Bulls of this breed, the joint cost of which was 550 guineas, and the Bull bought by him for the Board at £42 could have been sold two days after to a breeder from New South Wales, at 46 guineas. Earl Spencer, who is now famous for his attention to this stock, has a long list of orders for all the Bull Calves he can spare, at 50 guineas each. This latter fact I have from the first authority. To have gone to these prices would have far outran the sum put into my hands for expenditure, and I was therefore obliged to appropriate the sum in the purchase of young Stock of good pedigree and points, and which, if carefully tended, will form valuable additions to our Provincial Stock, and when they reach their full age, will exhibit the Breed in its perfect condition.

The short-horned are celebrated both for Beef and as Milk-ers—the Hereford Stock are best known for their virtues in feeding—they supply the London Market with its best Beef. A good Hereford Bull of full age cannot be bought under 50 or 60 guineas. I endeavoured to get a good Bull of this kind from Mr. Price, who is well known for his skill in this breed. Mr. Hobbs had hired it for the last season at £40. This sum is not excessive,—for the ordinary price paid for the use of a Hereford or Durham Bull for one season varies from £40 to £80 and even £100 sterling. The £100 currency voted by the Board for the importation of the best breeds fitted for the Province, I intended to expend in the purchase of a Hereford and Ayrshire Bull and Heifer. I have purchased two of the former, a Bull of 6 months and a Heifer of 2 years of age in Calf, both from Mr. Hobbs, who is the first breeder in Essex of this kind. We have his name and guarantee for their value and points. The Ayrshire cannot be imported until next spring.

Now, as to the Sheep, let me state that the pedigree and name of the breeder entirely regulates the value. The price of South Down Tups varies from 20 to 50 guineas. At the late show at Liverpool, the prize Sheep sold there at £35 to £40—£40 is paid as the season price of a good Ram. The Sheep exported to Nova Scotia by Mr. Bowman, by the ship Emmeline, cost some of them, I was told, as high as 30 guineas. The value of the Leicester Tups ranges from 10 to 20 guineas. To have expended the £200 currency—to £156 sterling, voted by you in the purchase of a few choice specimens, would have marred the object you had in view, and I therefore thought it preferable, under the advice of Mr. Forbes, a man of excellent skill, to buy sheep of pure blood and of good points, although at a more moderate price. The Ewes are from the stock of Mr. Hobbs, and cost 5 guineas each. These are beautiful specimens of their kind, one of them a perfect model. The Rams cost five or six guineas each, and upwards, and although they can-

not be called the best Stock, I am assured they are excellent of their kind. I enclose a correspondence held with Mr. Hobbs on this subject, and you will perceive that his neighbour, Mr. Webb, would not sell one of his South Down Tups, under 13 to 20 guineas. These men sell no animals from their Stock which they do not guarantee—I mean as to their pedigree and points—and therefore they are bought with the certainty that you have the breed in its purest and best form—but as this requires, on the part of the breeder, both great care and skill, they seek compensation in a superior price, and the public here are quite willing to pay for them. The choice stock of the first breeders are always in demand, and it is often a favour to obtain them. I endeavoured to obtain a Cotswold Ram and Ewe for the Central Board, but Mr. Forbes could not buy them at the limit set. Lord Western, who is well known as a breeder of them, would not give a Ram and Ewe to him under the price of 10 guineas each, and I thought it better to seek the instructions of the Board before I went to this price.

Besides the Leicester, I have sent some good specimens of the Cheviot breed. These are well fitted for the Highlands in Aylesford, Pictou, and Cape Breton; and some judges have recommended the Board to try the Black-faced Highland Sheep. They are a hardy race, and would bear, without shrinking, our cold climate.

I have ordered specimens of the three best kinds of Pigs. The improved Essex have been raised by Mr. Hobbs. He had one animal of this kind at Liverpool, which attracted universal notice. His price was five guineas each, and I saw him receive at Liverpool myself, in the show yard, a large number of orders from those engaged in the rearing of Pigs. The animals sent will speak for themselves—but I have to add that they are all obtained from first rate breeders, and that the sum paid is the ordinary price—£5 in place of 5 guineas were refused for some of them.

To give the Board a full knowledge of the different qualities of these stocks, I have bought, and send, the 3 volumes on Cattle, Sheep, Horses, and Pigs, published by the Society for the Diffusion of Useful Knowledge. They have been recommended to me as the best works on the subject, and I send also a set of Pictures of the finest animals of the different kinds, exhibited at the shows for the few past years. Nothing can prove more clearly than the latter, the importance of attending to the introduction of the best species of stock, and I am satisfied that no appropriation of the public funds will, in time, afford a more productive return, or confer upon our Farmers more substantial benefits.

From the experience and information acquired in the conduct of this Agency, I beg to submit the following suggestions for your future guidance.

It is of importance to convince the Agricultural classes universally of the great superiority which the best breeds in England have reached, by the capital, skill and talent devoted to this branch of enterprise, and I would therefore advise the Board next year to add their own funds to those of the local Agricultural Societies, and to import one choice specimen of each kind at the prices which they command here. I add an estimate of the cost.

	Currency.
1 Short horned or Durham Bull, 3 years old,	say, £120 to £150
1 ditto Heifer 2 years old, in calf,	40 to 50
1 Hereford Bull, 3 years old,	50 to 60
1 ditto Heifer, 3 years old, in calf,	30 to 40
1 South Down Ram,	20 to 30
1 ditto Ewe,	10 to 20
1 Leicester Ram,	15 to 25
1 ditto Ewe,	10 to 15
1 Cotswold Ram,	15 to 20
1 ditto Ewe,	10 to 15

By having these, the country will be able to see, not from pictures or description only, the perfection to which these animals have reached, and will be inspired to the exertions required. In subsequent years the importation could be confined to Calves and Yearlings, which from the best Breeders can be obtained at more moderate prices,—will be conveyed at a cheaper rate across the Atlantic, and will suffer less from the voyage and change of climate. The younger they are, they of course will be more profitable for breeding. You can put the order into no safer hands than Mr. Forbes', and on submitting this list to him, he desires me to add, he would do his best to get the animals at even lower prices,

and would like to have the order for some months in his hands before they are required to be shipped.

For the species of Stock above referred to, I believe that London is the best shipping Port—the best Breeders being in the neighbourhood, and the cattle being easily brought to the Docks by the numerous rail roads which branch from the city. Here also the best Stallions of the Suffolk breed and full-bred Horses can be got—but the Ayrshire and West Highland breeds of Cattle, and the black faced Highland Sheep could be easiest bought at, and shipped from Greenock. This also would be the best place to get a Clydesdale Horse—which still support their high character for the plough and cart. I have written to Scotland to obtain the necessary information on these subjects, and will enclose to you the letters I receive in reply.

I have made also extensive enquiries into the quality and value of different species of Stallions. There is no such horse known in England as a "Leicester Hunter." The horse to meet this description is the progeny of a thorough bred Horse and a half bred Mare. You may purchase the former from £200 to 1,000 guineas—but a good horse could be bought for £200 to £300—I saw the other day a dealer in horses of very high character, who said to me this—"let the Board fix upon the price they can afford to give—say from £250 to £300 sterling—let me have the order for some months before the animal is required, and I will suit them,"—but a real good horse of this kind cannot be got for less than from £200 to £300. From the description I gave him of our Mares, he seemed to think that a cross of a thorough bred would yield excellent Horses for harness or the road.

For Draught and Cart Horses the Suffolk Punch are here spoken of in high terms. The price of a Stallion runs from £60 to £100, and I saw an invoice of six sent a few days ago to the United States, the average cost of which was £85 sterling. They would form an excellent stock for some of the Counties in Nova Scotia. Let the price for this be fixed as above suggested, and the animal will be purchased to meet your limits.

In prosecuting the other objects of my Agency, I have further to inform you, that Lord Spencer, who now ranks so high for his skill and enterprise as a Farmer and Breeder, has desired me to say that he will have great pleasure in becoming a Corresponding Member of the Society. I enclose a plate of one of his short horned cattle, which carried off the prize at the Show in Smithfield, in 1840, and was sent to me by his private Secretary. The Council of the R. E. A. Society of London, to whom I submitted the letter missive you gave me, received your proposal in a very gracious spirit, elected the Board into a Corresponding Branch, and sent a complete set of their Journals. Mr. Hudson, the Secretary, has been of great service, and is entitled, I think, to your thanks for the attention and anxiety exhibited by him to further the public and important objects the Central Board has in view. I annex here the list of Agricultural publications which he has furnished as the best now extant. I have written also to the Highland Society of Scotland, and the Royal Agricultural Society of Dublin, and expect to bring with me the replies of these Boards to this application, and from the character of the two bodies I have no doubt they will be favourable. In conclusion, permit me to say that the purchase and shipment of this Stock has exposed me to great labour and anxiety, and I have only to hope that if any errors have been committed, or the animals do not come up to your expectations, you, and the local Societies will do me the credit of believing that I have taken every possible precaution to have their orders well and faithfully executed.

I have the honor to be,
Your obedient servant,
GEORGE R. YOUNG.

To the Hon. J. M'Nab, and W. Young, Esq. &c.
Central Board, Halifax, N. S.

"THE COLONIAL FARMER,"

TITUS SMITH, EDITOR; R. NUGENT, PROPRIETOR,
Is published monthly at the Novascotian Office. Terms—single copy, 5s. P^a annum, six copies for \$5, twelve copies for \$10 and twenty-five copies for £5.—in all cases in advance.

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