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THE  
CANADIAN AGRICULTURAL JOURNAL.

VOL. II.

MONTREAL, OCTOBER 1, 1845.

No 10.

TO OUR FRIENDS.

This being the tenth number of our Journal for this year, we would earnestly request our Subscribers, and all those to whom we have sent the Journal, to send us the amount of their subscription for this year, and any that may remain due for last year. It would not, of course, be worth the cost for us to send an agent to collect these small sums, and we therefore hope that all who have received our Journal, and consider it worth a dollar annually, may send us the subscription by the post-office to Montreal, or to pay the amount to our publisher, Mr. J. C. BECKET, St. Paul Street, when more convenient. We have stated, in a former number, that we shall never attempt to enforce payment for this Journal, but will rely upon those to whom we send it, that they give us the necessary support, if they conceive it deserving of any encouragement. Every individual to whom we address it, must be perfectly aware that the Journal cannot be published without considerable expense—and we trust it is not too much to hope that we shall meet with that degree of encouragement and support which the object of our publication ought to obtain. However we may have succeeded, we have devoted much of our time and money to forward the improvement and prosperity of agriculture—and though, in doing this, we may have given offence to some, yet, we hope this will not deprive us of that support which a publication of this nature should receive from all farmers, and all who wish well to the agricultural interests of Canada. Our publications are before the public for many years—their object cannot be mistaken; but notwithstanding all this, we regret to say that farmers, in Eastern Canada particularly, have been our worst supporters; and though we have done all in our power to promote their interest and prosperity, we have very few of them to thank for any favour or support in return, but, in many cases, the contrary. We have acknowledged before, and we now do so again with the greatest satisfaction, the favour

and countenance we have received from some individuals, and we are sorry that we cannot name them publicly that they might not be mistaken from others who have acted differently towards us. We are aware that those who have generally supported us have done so on public and general grounds, and were not influenced by that narrow-minded envy and prejudice which blinds the eyes of some men, so that they will not see or acknowledge merit or usefulness in any thing but what proceeds from themselves. We now appeal to the public generally. If our humble endeavours are approved of, may we have some manifestation of it, by answering this call in support of this Journal. We expect it only from those generous and enlightened minds who can understand that other men may be actuated by worthy motives, and even devote their best energies to promote what they conceive to be the general interests of their country and fellow-men. If this appeal to the public is successful, we shall consider ourselves amply rewarded, by such a mark of approval, for all our exertions.

AGRICULTURAL REPORT.

The month of September throughout, was unfavourable for harvesting the crops, and we fear much damage has been done to some of the wheat, as the greater part grown in Eastern Canada was uncut on the first of the month. There has been fine days occasionally, but not so many in succession as would enable farmers to dry the grain and secure it, before it was again wet. In unsettled weather, farmers have much difficulty in saving their crops, unless they have ample command of labour. When the crop gets wet, in swarth or in sheaf, it may take the whole time that is dry to prepare it for the barn or stackyard, and if there is not full command of help to secure it when dry, it may be again wet, perhaps becomes injured, and more labour and time is lost by it. Settled dry weather, at harvest time, is of great importance to farmers, and enables them

to do the work at half the expense, and without any injury to the crop. A wet harvest time may destroy, or greatly lessen, the value of a whole year's produce. It appears, however, that we were favoured with as good harvest time here as in England, and in general we have better, and more settled weather in Canada than in the British Isles. We find also, that they complain of the worm in the ear, (the larvæ of the wheat fly,) and some of the reports state that several grains are wanting or blighted in the ear. This want or blight we believe to have been occasioned, as with us, by the larvæ of the wheat fly which destroyed the germ of the grain, and left a want in the ear. The maggots fall out when they have done their work, and do not go from one grain to another, fortunately, or they would destroy the whole ear and crop. We have often seen ears of wheat here, with not more than two or three grains in them, and sometimes not even so much as one grain—all the rest of the ear being empty, or the grain so eaten as to be worth nothing. We believe that there is now in Canada a variety of wheat that can be cultivated successfully, that may be sown at a time to escape the fly, and which will not rust. We have been told that a good crop of this wheat was raised this year that was not sown until the 10th of June, and was harvested in three months. We have also understood, that in almost every instance in which any other than this wheat was sown, it was injured by either rust or the fly. This should be a warning to farmers, next year, to provide themselves with this wheat for sowing, as there is abundance of it in the country. Since the harvest commenced, persons from distant parts of the country have said that two bushels of the common wheat would have readily been given for one bushel of this new seed wheat for sowing last spring; but they did not think it could be had, though we know there was abundance of it about Montreal, and we had it ourselves. We mention this to show how greatly the general interests of agriculture is neglected. There was no trouble taken to remedy the great calamity that happened to the Canadian farmers in the loss of their wheat so many years, unless what they might do to remedy it themselves, though we constantly suggested the remedy.

The crop of oats is very much complained of, and we believe it is far from being a good or productive one, as a large portion of it has been injured by mildew, nor has it filled pro-

perly. We regret this, as a considerable quantity was sown. Some of the crop of pease are also reported to be injured by continued rain, after being cut. Indian corn has turned out better than was expected, but it is not a crop that is cultivated to any great extent in this part of Canada. The potatoe crop, we believe, is very considerably affected by disease in the tubers, and we fear that a large portion will be utterly useless. This disease is not yet satisfactorily accounted for, nor has any remedy been suggested that would be likely to be successful. Our own idea of the matter is, that disease has first been induced by the application of too large a quantity of manure, and that from this cause potatoes have, by degrees, become soft, and more liable to disease; and we have no doubt this disease is in some way connected with the dry rot in the seed, or that both diseases proceed from a new defect in potatoes, which was not known until within the last few years. If we force a large produce, we must not expect to preserve the whole from the ravages of insects and other vermin, which are actually produced by luxuriant vegetation. The one is a natural consequence of the other, and, of course, we must not complain of sharing a part of our very large produce with what may have as good a right to live upon the fruits of the earth as ourselves.

When the crop is taken up, it would be well to put them in pits in the field, or rather we should say long heaps, laid upon the surface and covered with earth for a few days, and when removing them to the cellar or roothouse, select carefully the diseased potatoes from the sound. We have found it a good plan to mix some light bog earth, in a dry state, with the potatoes when storing. Only a small quantity is required, and it keeps the potatoes from lying too close, and has other beneficial effects upon them.

The land is now in fine order for ploughing, and farmers should be active in having as much of the work done as possible, and when done, have it well drained and water-furrowed. If it is not left in this way, it might as well not be ploughed. There should be free passage made for the water running off from every furrow, so that the land may be freed from it the moment the snow thaws in spring. We would recommend applying manure now to the soil for potatoes in spring, where the farmer can apply it.

We planted our potatoes in swarth or grass land which had been top-dressed last spring, and we have scarcely any rot in the crop, but they are not yet taken up. Though we have heard many reports of the great injury done to wheat by sprouting while harvesting, we trust it is not so bad as it is represented. We cut and harvested our wheat in September, without any injury to the crop, in the average weather of the month, and we know other farmers that have been able to do the same.

Cote St. Paul, October 2, 1845.

#### ON THE PREVENTION OF CURL AND DRY-ROT IN POTATOES.

It would be doing injustice to the theory before stated, if it were sent forth to the public without a brief notice of some of the objections which at once occur to those conversant with the subject. The first I shall allude to is that the management of seed potatoes during the winter, the mode of planting, and more especially the nature of the season after planting, exercises a decided influence in modifying or increasing the potato failure; which, at first sight, seems hardly reconcilable with the supposition that such failure is dependent on the degree of maturity of the seed potatoes when harvested. I at once admit that if seed potatoes are kept in too large a heap and allowed to ferment, or if kept so warm as to induce excessive growth during winter, or in any other way are so treated as to weaken their vitality, the sets will, many of them, fail, and others make weak and unhealthy shoots, very much resembling, and possibly identical with curl. It must be borne in mind, however, that though I consider overripening of the seed to be the ordinary cause of the curl, I by no means assert that it is the only one. I am well aware that deficient management will especially, if followed by long drought, produce failing crops, and whether such failure is due to curl or not I can offer no opinion; but the great puzzle to potato growers has been that with the most careful management, failures continually occur, and these failures may, I think, be traced to ripe sets. That the influence of season is great I should be the last man to deny, as in two instances my potato crop was affected with curl, (distinctly traceable to having used ripe sets,) they continued to get worse so long as the drought lasted, but on the occurrence of heavy rains they improved very much; and this is quite in keeping with my theory, as when once the plant has a stem and leaves whereby to elaborate nourishment from the atmosphere, and roots which purvey from below, a large supply of moisture will give it such an abundant flow of sap that the vitiated juices of the decaying set will both be very much diluted and the plant will derive sufficient vigour from external sources to outgrow a slight ailment; whereas in a droughty season, the plant is much more dependent on the set, and this at such a time furnishes the poison in a concentrated form.

The next objection I shall notice is, that one of the best ways of getting rid of curl hitherto known, is to grow the potatoes intended for seed on a piece of old meadow or other land that has been long uncropped. This is easy of explanation. Fresh land contains a supply of food which has been accumulating for years, and accordingly produces a more luxuriant growth and later maturity.—Every one must have remarked that in a dry season plants of all kinds are less fully developed, but ripen earlier.—This is doubtless owing to the liberal supply of nourishment which they receive; for even where the land is abundantly manured, plants cannot avail themselves of it without moisture. When a plant has attained a certain stage of growth, even though considerably below its ordinary development, should its supply of food be stunted,

either in consequence of drought, or of a scarcity of the necessary elements in the soil, it will at once proceed to form and mature its seed. This is readily observable in the case of weeds. The same species of grass which is common in our meadows will be found frequently growing by a roadside, or even on a gravel walk, and in dry weather will flower and bear seed, though so stunted and dwarfish as scarcely to be recognizable. This will occur considerably earlier in the season than the time of ripening of the same species of grass in an ordinary meadow, and again the meadow-grown plant will ripen far before another of the same species grown by a ditch side or in other moist rich soil, and this last will as much exceed the meadow plant in size and luxuriance as the one in the meadow did the one in the gravel walk. The *Poa annua* is a species of grass which may frequently be found in all of the three situations above named. That potatoes are not exempt from this law of nature I have had abundant proof. On the occasion previously mentioned, where I planted potatoes on a piece of rich old turf, soaked for years with the drainage of a farm-yard, they never did ripen, but grew on through the whole autumn, and were as green and vigorous in November as they had been in July. At last a heavy fall of snow came with a severe frost, and in forty-eight hours they were as black as if they had been burnt, but the tubers were still unripe, and were the very worst on the table, and made the best sets that I have ever possessed. In 1844 I had also a strong instance. In reclaiming an old lane some parts had to be lowered and some hollows to be filled up, and both being planted with potatoes at the same time, those planted where the old hollows had been, and which now had a considerable depth of fresh soil, grew considerably taller and ripened some weeks later than those on the ridges whence the soil had been taken; though even in these places considerable pains were taken to retain as much of the surface soil as possible; and as the ridges and depressions ran parallel to each other for forty or fifty yards together, the marked difference in the time of ripening caught the eye at once. I have also frequently observed that potatoes planted near hedgerow trees (especially ash) ripen earlier than the rest of the field. It thus appears, as well by the analogy of other plants as by direct observations of the potato itself, that a deficiency of nutriment produces early maturity, and vice versa. Fresh soil, it will at once be admitted, contains an extra supply of food; potatoes therefore grown on such soil will be in a growing state when those on old-going land will be quite ripe, and, if harvested together, the former will be unripe and make good sets. It is very probable, however, the more abundant supply of all the elements of nutrition to be found in fresh soil may have a considerable effect, and concur with the under-ripening of the seed in producing a healthy and vigorous plant.

An objection which has already proved fatal to several theories that have been brought forward to account for the potato failure, may be briefly stated as follows:—“We planted, we manured, we harvested our potatoes fifty years ago much as we do now, except that the whole was then done in a more careless, hap-hazard way; yet we were then never troubled with the complaint which is now our bane. How can this be accounted for except by the deterioration of the plant itself?” The causes which produce failure now, and which did not exist formerly, may, I think, be referred—1st, to change of climate; 2d, change of soil; 3rd, change of practice.—1st, Change of climate. The great increase of draining, enclosing, and planting for shelter, has produced a very sensible change of climate in exposed situations, which are the places most in vogue for the supply of seed potatoes. In the case of Sawdon, before mentioned, enclosure, &c., was at any rate contemporaneous with the deterioration of their seed potatoes, and the marshland districts, which were formerly supplied from Sawdon, now get their seed from Scotland. It is indisputable that both cold and wet retard the maturity of all plants; the improved practice of the present day has removed the one and very much reduced the other, and accordingly our potatoes become more thoroughly ripened and make worse sets. To those who are inclined

to attach little importance to this reasoning, I would put the question—where would you go for seed potatoes if you should be troubled with curl? I answer, without fear of contradiction, that if you are at all conversant with the subject, and have no fresh land that you can conveniently break up, you will either send to an exposed hilly district, or to a peaty moorish soil. Here, then, we see that experience guides us to the cold, wet soils, to those places, in short, which are highly unfavourable to early maturity and from which we have a good chance of obtaining unripe seed.—2nd, Change of soil. In spite of the numerous valuable suggestions which the farmer has already received from the man of science, agricultural chemistry is still too much in its infancy to be able to specify the exact proportions and combinations of the various elements of vegetable life which should exist in a soil to enable it to bring to the greatest perfection the crop with which it is to be sown; and accordingly we find that no chemical combination of manures that has yet been tried has produced a compound in which plants grow with so much health and vigour as they do in fresh (i. e. uncropped) soil of good quality. This fact is admitted on all hands; but let us examine a little more in detail. To say that uncropped soil will grow most (if not all) plants in greater perfection than land that has been in tillage, is tantamount to saying that in our ordinary routine of cropping some element or elements are removed from the soil which we do not restore to it in the manures which we apply.—Hence it follows that the longer we continue such a repetition of crops and manures, the greater will be the deficiency of the substance which we fail to supply, until at length some one crop, more dependant than others on those particular elements, fails to grow with its accustomed vigour, and is attacked with disease and parasites previously unknown. If all land were of similar quality, and had been treated alike in every respect, this falling off of certain crops would have been simultaneously remarked in its first occurrence; but with the infinite variety of soil, mode of cropping, and manuring, which prevail on different farms, and even on different fields of the same farm, the question is so complicated as to remain still doubtful. The remedy for this unavoidable (because as yet undefinable) deterioration of soil, is to resort occasionally to fresh land for seed, and to make use of every available variety of manure, until the advance of science shall enable chemists to point out the deficiency and suggest the remedy in each individual instance.—3rd, Change of practice. Another cause to which some little weight in due is the decidedly improved practice observable amongst the farmers of the present day. They have better teams, superior implements of husbandry, and, stimulated by the more enterprising of their class, are less in the habit of dawdling over their seed-time, and think it of little importance whether they sow or plant a month earlier or later. It is rare now to see a man planting potatoes in the middle or latter end of June, though even yet I may occasionally see an instance of it, and am told that a generation back it was by no means uncommon. Potatoes planted thus in the middle of summer on undrained, perhaps unenclosed, land, would, in ordinary seasons, be taken up unripe; on the occurrence therefore of failure in the crop of a good stirring farmer, it would be easy for him to get seed from a neighbour whose potatoes grew well because they were late planted and badly ripened, and thus for a time the curl would be stopped.

The foregoing remarks will make it sufficiently plain that the principal remedy I propose for the potato failure is the use of unripe sets. As, however, there are two ways of procuring unripe sets—one by planting late, the other by taking them up early—it may be well to point out some reasons for preferring the former plan. Potatoes that are taken up early have so great a tendency to vegetate during winter, that it is scarcely possible to prevent their being weakened by premature growth before the time of planting arrives. By planting late we not only avoid this evil, but have the additional advantage that after the turnips are sown, a hand or two might easily be spared in the month of June to dig or fork out the sides of hedges, corners of fields, young plantations, &c.,

which are frequently mere nurseries for weeds, and by planting a few bushels of potatoes in these out of the way places, a supply of seed of superior quality will be procured without interfering with the regular crops. They should be taken up while the tops are still green. It is easy to see when a potato plant is done growing, and then without any loss of time, and before a single yellow leaf appears, the plants should be lifted. If it should be practicable to expose them to the sun for a few days before they are put up for the winter, they will keep better and grow more vigorously. I am quite at a loss to explain this fact, but I have been told by several gardeners that they have followed the practice for years with uniform success, and it has occurred to myself more than once to observe a particular luxuriant chance plant, and on taking it up to find that it had sprung from a green potato which had been thrown aside when the crop was harvested. In conclusion, I would beg to remark that, should my supposition as to the causes which make ripe potatoes bad sets prove incorrect, there is, at least, no doubt as to the correctness of the facts; and whilst the researches of philosophers are slowly but surely demolishing all erroneous theories and confirming true ones, we farmers may possibly turn to account the practical suggestions deduced from several years' careful observation.—York, March, 1845.

### DORKING FOWLS.

Since spring opened we have received so many letters of inquiry about Dorking Fowls, that we have concluded to give what follows as a general answer to them.

At our special request, Capt. Morgan, of the London packet ship *Victoria*, made an importation of a dozen of these superb fowls last October, for distribution among some of our friends. Only five, a cock and four hens, survived out of the twelve.—These were large and fine, and evidently highly and carefully bred. Being so few on arrival, Capt. Morgan very kindly sent the whole to Mr. L. F. Allen, of Black Rock, to cross with the produce of those we brought home from England in 1841.

As Dorking fowls are likely to be in vogue now, we think it advisable to caution all those who wish to possess good ones, to be very careful what they purchase. Choice birds are extremely difficult to be had, as we found to our cost when in England, and it was only by special favour we procured some at last. Capt. Morgan has been upwards of two years endeavouring to obtain this importation, and finally succeeded only through a worthy clergyman, Mr. Courtney, of the town of Dorking, a passenger with him on a recent voyage home from the United States. He accompanied them by a note, apologizing for the high price he had to pay for them, and further saying—"The chicken-breeders of Dorking have adopted a sort of principle, that they will sell away no birds *alive*, except capons, as they desire to retain them as much as possible amongst themselves, in which, by caponizing, they carry on quite a profitable trade, and they can only be had, by a particular favour. They have very much improved them of late years. The old *white* sort is altogether bred out, and the speckled and grey varieties are now all the rage. They are also larger, and better formed now than they formerly were, and altogether are perhaps the best barn-door fowls, in existence—at least these people so esteem them."

To the above we will add, that there are plenty of Dorkings for sale in the London market, of an inferior and cross breed, some of which have been recently imported to supply the American demand. Every five-toed chicken is also picked up now in

this vicinity and sold for a Dorking, though it may be the most common dung-hill that walks. Perhaps one out of seven or ten of the pure breed have only four toes, so that to show five toes is by no means an evidence of purity of blood. We hope this observation will be remembered, to prevent imposition.

It is difficult to describe the Dorking fowl, or indeed, any animal, so exact as to prevent imposition, although a good one will be recognized at once by those familiar with the breed. The prominent points are a fine head with brilliant eyes, and single or double combs, in both sexes; a graceful neck, rather short than long; wide, deep, projecting breast: great length of body, which is round rather than flat or square; and fine short legs, when we consider their large size. The port is usually majestic, and a pleasing, quiet air of good breeding pervades their general appearance. The colours are various, from a yellowish white to jet black. Those, however, speckled with dark and yellow brown and white, or streaked with silver grey, are most esteemed. Cocks with dark speckled breasts, and reddish burnished wings, are most to our taste, though the silver grey are frequently preferred by others. They are thickly feathered, hardy, good layers, steady setters, and the best of nurses. They are very gentle birds, fond of being petted, and though far from cowardly, are not at all pugnacious. Their meat is excellent, being lean and tender.—They are preferred in England to all other breeds for capons. Well fattened, they usually weigh from 7 to 10 lbs., and often go as high as 12 lbs. or more. We speak of capons only as attaining these great weights.

Just as we had written the above, we received the following letter from Capt. Morgan:

St. Katherine's Dock, London, April 14, 1845.

My Dear Sir,—Your letter requesting me to get some more Dorking fowls, I have received, and assure you it is not so easy as you may imagine. I shall write to Mr. Courtney again, who lives near Dorking; and procured those last for me. He told me, and I have also ascertained the same from other quarters, that there is none to be obtained here, unless of a mongrel breed. The real Dorking fowls that you see in London, will not breed; you must therefore wait until I get them for you. They will cost about \$4 each, without freight and looking after, which would be about as much more, for a small lot; but this I will do for you with pleasure, for old acquaintance sake.

Yours truly,

E. E. MORGAN.

Soon after the reception of this letter, Capt. Morgan arrived here in his own ship, bringing a noble cock and five superb pullets of the Dorking breed. The pullets laid nearly the whole voyage, a thing unexampled, he says, by any other breed of fowls crossing the Atlantic with him. The pullets weigh  $5\frac{1}{2}$  to 7 lbs., the cock  $8\frac{3}{4}$  lbs. When full grown, the latter will probably weigh 10 lbs., in ordinary condition.

To conclude, neither Capt. Morgan, of the Victoria, nor Mr. L. F. Allen, of Black Rock, wish to be troubled with applications for Dorking fowls.—What they keep is entirely for their own use. Dr. Field, of this city, and the Messrs. Carpenter, of Poughkeepsie, have been furnished with some of our own and Capt. Morgan's first importation to breed from, and now have a few young ones for sale. The price is \$5 per pair, caged and delivered on-board a vessel either at Poughkeepsie or this city (New York).—*New England Farmer.*

### STEEPING SEEDS.

We submit the following article from the *Agricultural Gazette* to our friends among the farmers, and would venture to recommend they should make the experiments therein suggested:—

In the present number of the *Quarterly Journal of Agriculture*, there is an interesting paper by Professor Johnston, on "the Manuring and Steeping of Seeds." The facts there recorded, and the manner in which they are shewn to be, what the known laws of Vegetable Chemistry and Physiology would lead us to expect, combine to render this a subject to which the experimental Agriculturist may usefully direct his attention.

The advantage of steeping seeds in certain chemical solutions seems to have been first pointed out by F. H. Bickes, of Castel, near Mayence. He announced his discovery in a lately published pamphlet, "on the Cultivation of Soil without Manure." Notwithstanding the extravagance indicated in its title, and which characterises it throughout, this publication records some surprising facts and testimonials on this subject; and these have lately been corroborated by the experiments of Mr. Campbell of Dundee. A letter descriptive of the method of doctoring seeds adopted by the latter gentleman, and of their consequences as exhibited in the growing plants, has just been published in the Transactions of the English and the Highland Agricultural Societies—an extract from it will be found appended to this. Mr. Campbell's experiments were performed upon seeds planted in the clay, taken from eight feet below the surface of the ground; and though under such unfavourable circumstances, the wheat plants from them tillered into five or eight stems, while those from unprepared seeds had only two or three stems apiece. That, however, which is broadly asserted in the German pamphlet is also hinted at by Mr. Campbell—viz., that steeping seeds in suitable solutions, will render all future application of manure unnecessary. This is a statement which no practical farmer can for one moment entertain, and therefore, we are glad that it is not necessary to suppose it to be true, before we can believe that this process may sometimes be beneficially adopted.

It seems probable, that by some such means as those suggested by Messrs Campbell and Bickes, the period of germination, which is one full of danger to the young plant, may in many cases be shortened; and this is very desirable, for owing to the conversion of the starch of the seed into sugar, which is then proceeding, the plant is at that time liable to attacks from all sorts of vermin. In the case of the turnip, especially, any means which would hurry it through this period into the rough-leaved stage of its growth, would be most useful, as it is only when its leaves are sweet that it is liable to the attacks of the fly.

But from the results of some of Mr. Campbell's experiments, we may infer that the influence of his process extends into the future history of the plant, much beyond the period of its germination; and it is on this account that we would recommend it now, as a suitable subject of experiment for wheat growers. The mineral ingredients of wheat amount to about one-fiftieth of its weight; and, from the mere fact of their existence in the seed, it is probable that they exert an important influence over its germination and future growth. Any artificial addition to their quantity—and, by soaking wheat in certain solutions, we can double the natural quantity of its mineral constituents—will therefore increase that influence.

The following are the substances which, besides the four elements composing its organic structure, are to be found in wheat—soda, potash, lime, magnesia, sulphuric acid, phosphoric acid, silica, alumina, and chlorine.

It would probably not be difficult to dissolve in water such matter in such quantities that the solution should contain in their natural proportions all these mineral substances; so that wheat, by being steeped in it, would merely increase the quantity of its mineral ingredients, without at all disturbing the balance among them which

nature has assigned; and perhaps this would be the best way of proceeding; but as it is interesting to know the individual effects and relative value of different substances as manure, we intend to try a series of experiments on the subject, confining ourselves in each to the application of only one of the salts, in the form of which the above substances must be employed.

For those of our readers who may not yet have got in all their wheat, for we by no means wish that it should be a mere garden experiment, we shall first state the plan we propose to adopt, and should our example be followed by any one, we shall be happy to report next autumn the results of his experiments, along with those of our own.

It is intended to soak for 48 hours, previous to sowing, eight parcels of wheat—say one bushel apiece—each in a solution, to be obtained by dissolving 5 lbs. of one of the following substances in such a quantity of water as may be necessary thoroughly to cover the seed.

The prices per lb., placed opposite these substances, are such as will be charged by any wholesale chemist, of whom they may be ordered.

Silicate of Soda	0s 6d. per lb.
Nitrate	0 3 "
Sulphate of Soda	0 3 "
Phosphate	1 6d "
Phosphate of Ammonia	2 6 "
Sulphate	0 3 "
Muriate	0 8 "
Nitrate of Potash	0 4 "

The wheat, after being thus treated, will be hoed in at the rate of two bushels of the dry seed per acre, in drills nine inches wide, and a ridge sown with wheat in the ordinary way will be left as a standard of comparison between each couple of adjacent plots. The extent of the experiment, for those who may not wish to hazard so extensive a trial, might be reduced one-half without, perhaps, much impairing the value of its results.

#### EFFECTS OF SOAKING SEEDS IN CHEMICAL SOLUTION.

I steeped the seeds of the various specimens exhibited in sulphate, nitrate, and muriate of ammonia, in nitrate of soda and potash, and in combinations of these, and in all cases the results were highly favourable. For example, seeds of wheat steeped in sulphate of ammonia on the 5th of July, had by the 10th of August, the last day of the show, tillered into nine, ten, and eleven stems of nearly equal vigour; while seeds of the same sample, unprepared, and sown at the time, in the same soil, had not tillered into more than two, three, and four stems. I prepared the various mixtures from the above specified salts exactly neutralised, and then added from eight to twelve measures of water. The time of steeping varied from 50 to 94 hours, at a temperature of about 60 deg. Fahrenheit. I found, however, that barley does not succeed so well if steeped beyond 60 hours. Rye-grass and other graminaceous seeds do with steeping from 16 to 20 hours, and clovers from 3 to 10, but not more; for, being bilobate, they are apt to swell too much and burst. The very superior specimens of tall oats, averaging 160 grains on each stem, and eight available stems from each seed, were prepared from sulphate of ammonia. The specimens of barley were prepared from nitrate of ammonia; they had an average of 10 available stems, and each stem an average of 34 grains in the ear. The other specimens of oats which were next the most prolific, were from muriate of ammonia, and the promiscuous specimens of oats were from nitrates of soda and potash—strong, numerous in stems, (some having not less than 52,) and not so tall as either the preparations from the sulphate or nitrate of ammonia.—*Mr. Campbell, Transactions of the Highland Society.*

#### ROTATION OF CROPS.

When a succession of crops is grown upon fertile land without renewal of manure, the produce gradually diminishes; and, after a certain period, if it be grain, the quan-

tity, which at the outset was eight or nine times the amount of the seed, will be reduced to three times, or even twice the seed. Thus crops impair the fertility of the soil, and eventually exhaust it.

It has long been admitted that different species of plants manifest great diversity in their powers of exhaustion. As a general rule, however, every plant may be said to impoverish the soil in which it grows. This impoverishment is always manifest when the plant, after maturity, is completely removed, but is less apparent when much rubbish is left. Thus clover, after yielding two crops, which are generally cut as fodder, might still yield a third. This last, however, is generally ploughed into the ground as manure, being buried along with a considerable quantity of roots. By this measure the soil is amended at the expense of the nutritive matter it contains.

In discussing the advantage of one course of crop over another, the question always hinges upon that of exhaustion. Wherever an unlimited supply of dung and of handwork can be procured, there is no absolute necessity for following any regular system of rotation. Under such favourable circumstances, it is expedient to ascertain what kind of cultivation is, commercially speaking, best suited to the climate and the soil. There is little to fear that by a continued succession of similar crops the fields will get infested with noxious weeds, because this inconvenience may be obviated by labour. Nor is impoverishment of the soil to be dreaded, since that can be remedied by the purchase of manure. The whole craft of agriculture is reducible to comparison of the probable value of the crop with the cost of producing it. Farming of this sort excludes the keep and propagation of cattle, and may be, strictly, regarded more as gardening than farming.

But where manure cannot be had from without, things must be reduced to a system: and the amount of produce which it is possible to obtain is fixed within bounds, which cannot be exceeded with impunity.

When, by judicious cultivation, land is rendered fertile, it is necessary, to secure its fertility, to supply after every succession of crops, equal quantities of manure. In considering this in a purely chemical point of view, it may be said that the produce which can be taken away without damaging the fertility of the land, is the organic matter contained in the crops, abstracted from that present in the manure. Indeed, this latter substance must, in some form or other, return to the soil to fecundate it anew. It is capital placed in the ground, the interest of which is represented by the commercial value of the produce of all the other agricultural operations.

Where lands are extensive, and population scattered, there is less necessity for being tied down to systematic cultivation. But when from increased population the land becomes more valuable, a larger amount of produce is demanded. Imperfect culture would prove inadequate. Accordingly, a triennial rotation of crops was very anciently adopted in the north of Europe, consisting of fallow land frequently ploughed during summer, followed by two years of grain.

Leaving waste one-third of the surface has always been held a grave objection against triennial rotation. Hence various attempts have been made to get rid of the summer fallow. On the other hand, it has long been remarked that growing grain during several consecutive years on the same ground, even if fertile and manure abundant, was not advisable, owing to the almost insurmountable difficulty of destroying weeds. The fallow was justly considered the most efficient and economic means of getting rid of these. For this purpose fallow crops, as they were called, were introduced. Peas, beans, vetches, were at first the only plants used as fallow crops.

The fallow crops enabled the farmer to derive from land a greater amount of produce in a given time, without prejudice to the raising of grain. The introduction of clover so modified the system of fallow crops as at one time to induce the belief that the point of perfection had been attained in agriculture. This was when it was ascertained that clover, which had hitherto been only cultivated in small enclosures, might be sown in spring upon

corn (grain) land, and occupy next year the place of the fallow in the triennial rotation. Clover, so far from exhausting the soil, was found to give it new fertility, and the succeeding grain crop yielded a plentiful harvest.

#### VARIETIES OF CHEESE.

**Cheshire Cheese.**—This cheese is famous all over Europe, for its rich quality, and fine, piquant flavor. It is made of entire new milk, the cream not being taken off. The cheeses are generally of very large size, usually about sixty pounds' weight. Each cheese is usually made of the produce of one day's milking from herds of from 100 to 200 cows, which feed on some of the richest pastures in England. The excellence of this cheese must be attributed to the goodness of the milk and the skill employed in the manufacture. The colour is not entirely natural, but a yellow tint is given by arnotto, marigolds or carrots, but a yellow tint is given by arnotto, mangolds or carrots. It is said that some increase the richness and mellowness of the cheese by adding beef suet; or any other wholesome and sweet fat, well clarified, which is poured into and mixed with the curd.

**Gloucester cheese** is much milder in its taste than the Cheshire. There are two kinds of Gloucester cheese—single and double. *Single Gloucester* is made of skimmed milk, or of milk deprived of half the cream; of course it is not very rich, but is often of good flavor. *Double Gloucester* is a cheese that pleases almost every palate: it is made of the whole milk and cream, and is a fat cheese, usually the kind employed for toasting, though the single often toasts very well. These cheeses are made of various sizes, the single generally eight to the cwt., and very thin, and the double four to the cwt., and at least twice as thick. The characteristics of Gloucester cheese consist in its great richness, the mildness of its flavour, and that smooth, waxy texture, which makes it cut without crumbling, as Cheshire cheese is apt to do.

**Stilton Cheese.**—This, from its peculiar richness and flavor, has been called the Parmesan of England. Its name is derived from having been first made at Stilton, in Leicestershire. It is made by adding the cream of one day to the entire milk of the next. The cheeses are all of a small size, from six to eight pounds' weight, and are of a cylindrical form, made in a vat, and are not considered sufficiently mellow until they are two years old, nor ripe until they exhibit spots of blue in the interior, marking the commencement of decay. It is said that some keep them in warm, damp cellars, to accelerate the ripening. The blue part is of a peculiar nature, different, it is said, from the common blue mould of cheese. The decay should not be advanced beyond a certain point. A variety of Stilton, but not so rich as the last, is made in a net, and of the form of a pine cone, the net impressing lines on its surface.

**Sage cheese**, called also green cheese, is made chiefly in the vales of Gloucester and Wiltshire, by coloring some curd with bruised sage, marigold leaves, and parsley, and mixing this with some uncolored curd; the whole is then made into a cheese, which, of course, exhibits a mottled appearance.

**Skimmed-milk cheese.**—This cheese, from skimmed milk only, is made in those districts of England where butter is the chief object of the dairyman, as in Essex and Suffolk. What is made in England of this kind has scarcely any flavor, and dries almost as hard as horn, but is as digestible as the softer cheese, though not very palatable. On the subject of skimmed-milk cheese, Dr. Anderson observes, that it is an erroneous idea to suppose that the agreeable taste of cheese depends solely upon the quantity of oily or fat matter it may contain. Parmesan cheese is made of skimmed milk; so are the Dutch cheeses, which many consider as very pleasant tasted. He has seen cheese made of skimmed milk that was exactly like the finest cream cheese, and he considers that what is called richness in cheese, depends as much upon the mode of making it as upon the materials of which it is made. In confirmation of this opinion he remarks, that though the taste of double Gloucester differs so much from Cheshire

cheese, yet they are both made from the same kind of milk.

**Parmesan Cheese.**—This most celebrated of all cheese, is made in the duchy of Parma and Piacenza, and in various parts of Lombardy: at present, the district of Lodi is in high repute for it. It was formerly supposed to be made from goat's milk; but it is made merely of skimmed milk of cows, and the high flavor which it has, is supposed by some to be owing to the rich herbage of the meadows of the Po, where the cows are pastured, and by others solely to the process by which it is manufactured. Half the milk has stood sixteen or seventeen hours, and the other half only six. The milk is heated and coagulated in a caldron, and, without being taken out of the caldron, the curd is broken very small by an implement consisting of a stick with crow wires; it is again heated, or rather scalded, till the curd (now a deposition from the whey, has attained a considerable degree of firmness; it is then taken out, drained, salted, and pressed, and in forty days it is fit to put into the cheese loft. The best Parmesan is that three or four years old, and none is carried to market until at least six months old.

**Cream Cheese**, although so called, is not properly cheese, but nothing more than cream dried sufficiently to be cut with a knife. A quantity of good sweet cream is put into a cheese-vat, with green rushes sewed together on purpose, at the bottom of the vat, which must have a sufficient number of holes to let the whey drain off freely. On the top of the cheese are likewise laid rushes or the suckers of Indian corn, in order to allow it to be turned without being handled. It is usual to make these cheeses from an inch to an inch and a half in thickness: the thinner they are, the sooner they are ready. It is kept in a warm place, to sweat and ripen, but extremes of heat and cold are injurious, and some judgment must be used in managing it.

**New Cheese.**—What is called in London new cheese, is either made all of cream, or like the Stilton, by adding the cream of one day's milking to the milk that comes immediately from the cow; they are extremely thin, and are compressed gently two or three times, turned for a few days, and then sent to be disposed of, to be eaten new with radishes, salad, &c. It may be made in the following manner: Warm some cream, add rennet in the proportion of a spoonful to a pint, or more if necessary. Put the curd into a sieve, having a cloth at the bottom; when it has remained twenty-four hours, transfer it to a cheese-vat, and cover it with a wet cloth and board; in about two hours it may be used.—*Encyclop. of Domestic Economy.*

#### TIPTREE HALL AGRICULTURE.

A committee of the Rugby and Danchurch Agricultural Association having been appointed to inspect Mr. Mechi's much-talked-of improvements at Tiptree Hall, Essex, and Mr. Davis's specimen of "thin sowing" at Croydon, Surrey, have reported the result of their visit:—The deputation waited on Mr. Mechi by appointment, in Leadenhall-street, London, and were received with great kindness and attention. After some interesting discussion on draining, subsoiling, and other agricultural pursuits, they proceeded by train to his Tiptree Hall Farm, in Essex, where they were met by his bailiff, by appointment, to view his extensive farm buildings, which were exceedingly well arranged for the occupation of the farms. The liquid manure tanks were particularly noticed, which were admirably constructed for the reception of the liquid manure conveyed from the stables, piggeries, and feeding houses, seven feet deep, water-tight, and under cover, into which was thrown the manure from the yard, and occasionally turned over, after which a portion of gypsum was spread over the tanks to prevent the escape of the ammonia; by this system a constant supply of excellent manure was in a perfect state for the land. Their attention was next called



to his six-horse power thrashing machine, with winnowing and chaff machine attached, the corn separated into departments very complete. They then walked over the farm, going through the crops. The wheat drilled two bushels per acre, at six inches apart, and looking very healthy, and the appearance of being a productive crop: some parts of it had been affected by the wireworm, and lost plant: a fine specimen of barley, at one bushel per acre, to all appearance very productive and very clean, the crops generally looking very productive. Various other improvements are going on, burning hedge-sides, roots, &c., which was most effectually done, not a single hedge or tree of any description remaining on the farm. The occupations are divided into six acres, with ditches to receive the drains, which communicate with a main drain running through the farm; his drainage is most complete at 32 inches deep and 24 feet apart. Mr. Mechi is of opinion that four feet deep would be more effective, and stated some practical and chemical observations, and that of Mr. Sperm, of Wooton, in Kent, had proved it by his own experience on stiff clay soil, with one-inch diameter draining pipes, for the last ten years. The deputation then proceeded to Mr. Hewitt Davis's, Spring Park Farm, Croydon, Surrey, where they met Mr. Davis by appointment, and were received with great kindness and attention. They walked over his four farms, consisting of about 600 acres, to view his crops of thin sowing, at five pecks per acre; with the exception of oats, seven pecks. His oats and barley are particularly good, and wheat also, with the exception of a small portion that has been affected by wire-worm. His farms are most effectually drained, and he has carried out his four-course system of occupation, without a blank fallow, most admirably; and great credit is due to Mr. Davis for his spirited occupation upon such an inferior gravel soil. The quantity of sheep he fattens off in the year is quite extraordinary; about two to the acre, and a great quantity of pigs."

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### The Canadian Agricultural Journal.

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MONTREAL, OCTOBER 1, 1845.

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The Montreal Agricultural County and District Cattle Show, took place at the Hay Market on Wednesday and Thursday last, the 1st and 2d of October. The show of horses, neat, cattle, sheep, and swine, was of a mixed quality, some very good, and others that were not so. There was a good opportunity of having the animals entered in each class kept together this year, but this most essential arrangement was not enforced, and consequently it was a matter of great difficulty for judges, however competent, to be able to see perfectly the comparative merits of each animal in the class to which it belonged. To have to search for animals entered in the same class throughout the whole of the cattle exhibit, mixed up as they were—bulls, cows, steers,

and heifers, of all ages, and then attempt to judge of the merit of each compared with others, was more than any ordinary man could do correctly. The animals of each class should be kept together, and no other stock allowed to mix with them, otherwise it is impossible to make a correct award. The cattle show would be much more interesting, and the animals look better, if each class was kept separated. The cattle show proves, at all events, that there are a sufficient number of large cattle in the country to breed from, if large cattle are the most desirable. We were also glad to see some horses of pure Canadian breed still in the country, and we believe they were decidedly the best horses for agricultural purposes that appeared at the show. The neat cattle of Canadian breed we are sorry to see neglected, because we are sure they might be improved so as to be the most suitable, useful, and profitable breed in Canada. The true mode of improving the native stock of any country is by the selection of the best both of male and female; breeding *only* from those, and increasing the size by superior keep to what is required. This is a much better mode of improving the stock of a country, than by introducing a breed of animals that are too large for the keep of ordinary farmers, or for the present general state of Canadian agriculture. It is very well for such persons as are so circumstanced with regard to capital, and the improved state of their farms, to have stock proportionably large, but were these stock attempted to be kept on the generality of Canadian farms, what would be the consequence? Certainly that they would dwindle down to be worthless, or die of starvation. Large sized animals that have become reduced in size by insufficient keep, are the most unprofitable stock a farmer could possibly have. Animals that are small, if of good natural quality, may soon be increased in size by superior keep; but it is certain that large animals will soon be reduced in size to the keep that is for them, and then they will not make much return of profit to their owner. As a means of encouraging improvement we approve of cattle shows, but only as secondary to other means. We decidedly say, that the first exertion should be made to improve the cultivation of the country where it requires to be improved, and that this should be done by sending instruction and encouragement into every parish in Canada. It is by this means that the

amount and value of our annual productions might be soon doubled, which they never can be by cattle shows alone. We appeal to the common sense of impartial friends of the country, what amount of improvement is likely to be produced by our last District and County Cattle Show. We have ever considered that the true object of granting public funds to agricultural societies was, that they might be expended in the instruction and encouragement of improvement where most required. This, we say, should be the first object of all who sincerely wish to advance the true interest and prosperity of Canada generally. We were glad to observe several members of the Legislature at the cattle show, who appeared interested in the proceedings. This is what is required, that they should not only be interested in the exhibition of fine cattle, but in forwarding improvement with the Canadian farmers in the most remote sections of the country, by seeing that instruction and encouragement is sent to their very doors. There is not much danger of the farmers who are able to send cattle to these exhibitions, and who obtain premiums, that they will not take care of themselves, and follow the most approved system of farming, for the mere profit of it—indeed it appears an absurdity to apply the public revenue to any such purpose as giving premiums to such persons. To encourage the better cultivation of the naturally fine soil of Canada, nearly waste, because it is not better cultivated, would be an object worthy of all real friends of Canada, whether members of the Legislature or not. We can have no motive in recommending these measures, but the general good of the country. If what we suggest is undeserving of notice or any action being taking upon it; let some other plan be proposed and adopted. We are only anxious to see improvement going on where it is decidedly necessary, not where there is already sufficient improvement, or a certainty that every advantage will be taken of every new improvement that may be discovered. If general good husbandry is desirable as a public good, let us strive to make it generally so by giving instruction and encouragement to those farmers who have not had so favourable opportunities of learning the art of agriculture as old country farmers now settled here.

In order that the act of the last session for the

encouragement of agriculture may be productive of general good, we conceive that every exertion should be made to organize agricultural societies in every county in Eastern Canada. It is, we believe, in the counties that require them most, that societies are not yet organized. It is also probable, that where such societies are organized, and in operation, the funds at their disposal are not expended so as to encourage and instruct where most required. In every parish in each county, a part of the public funds should be expended as premiums for the best managed farms, best draining, best crops, and best stock of cattle generally. This would bring encouragement to the remotest farmers in the country, who now feel they would have no chance whatever in competing with old country and other farmers that happen to be favourably circumstanced as regards skill, capital, and situation. Persons forget how very different are the sources from whence the funds of agricultural societies here, and in the British Isles, are supplied, and, therefore, how very differently the funds should be employed. In Britain and Ireland, there is no money given from the public revenue to the support of agricultural societies. The landed proprietors and farmers unite together, and from *their own voluntary subscriptions* offer premiums, under such rules and conditions as they may think proper. This is perfectly just, that they should do what they please with their own. Here it is different, as considerable funds are given from the public revenue, for encouraging the improvement of agriculture, and there cannot be a doubt that the individuals who take upon them the disposal of these funds are bound to appropriate them so as to produce the greatest general improvement, where most required, and that no part of these funds shall go to themselves. It is generally understood that the best and most competent farmers, as regards skill, and capital, are appointed as Managing Committees, and the very circumstance of their being allowed to take the premiums offered by themselves, excites doubts and discouragements, with most other farmers; as the Committees have the appointment of the judges, and are themselves a sort of court of appeal in every case that may be disputed in the distribution of those premiums. We would strongly recommend that the Managing Committees of agricultural societies should, while acting in that capacity, forego all

pecuniary rewards as premiums, and be content with honorary rewards only, the Societies' Medals.

This was at one time a fundamental principle of the Montreal District Agricultural Society, and it is to be regretted that it is not so still, as that Society should show an example of disinterestedness to all others. The simple question is, whether the money voted from the public revenue, by the Legislature, for the encouragement of agriculture should be appropriated to the instruction and encouragement of the ignorant and unskilful farmer, or go directly into the pockets of our best and most skilful farmers, because they farm according to the rules they have been taught, and which they know by experience to be the most profitable for them to practice. If the latter plan be adopted, the law may as well say at once that a certain sum of money shall be appropriated from the public revenue to be given to our richest and most successful farmers annually, for doing what they have been taught to do from their childhood—what they have found most profitable, and which they would not change for any more defective system, were they to get a large premium for doing so. This would be acting candidly, and saying at once that the money was not given to instruct or encourage the unskilful farmer, but to reward those farmers who happen to understand their business and practice it successfully.

We object not to agricultural societies, but we conceive the public funds voted them for the improvement of agriculture, should be so applied as to produce the required improvement; and this can be best done by distributing a portion in every parish for well managed farms, good draining, good crops, good pastures, good and suitable stock, good dairies, and the produce from them. If this were done in each parish, we should soon see a general emulation amongst Canadian farmers, to improve and excel, which we never will see by the present mode of managing agricultural societies' funds. Those who may differ in opinion with us upon this subject, may show that the present mode of acting with agricultural societies, generally, is the most judicious that could be adopted, and that the funds granted them by the Legislature are appropriated in the best manner to produce the improvement of agriculture where it is most required to be improved. If this can be clearly established, we shall acknowledge we have been in error, and rejoice in the prospect of the improvement of agri-

culture amongst the Canadian farmers, where, it is admitted by all persons who know the country, that improvement is much required, and would vastly augment the amount and value of the productions of the land we live in.

There is a large portion of the land of Eastern Canada a strong clay, and as well adapted for the production of wheat as any soil we have ever seen. The very defective system of cultivation under which it has been so long managed has, however, rendered it unfit to produce good wheat, until the system is altogether changed. We have for many years recommended summer fallows, as the most easy and certain means of improving these lands, and there is no doubt that it is a necessary process to bring this strong soil into a proper tith. The land in the hands of Canadian farmers is generally ploughed in the same direction, so that the sod or furrow slice is seldom cut across or broken. It is harrowed, also, in the same direction, and in a very imperfect manner. No wonder, therefore, that these lands should not now be in a state to produce good crops, and those crops be full of weeds. The strong clay lands require to be well drained, broken up thoroughly in every direction, and perfectly cleaned of all weeds, and this can only be done by a summer fallow well executed. The necessary improvement cannot be effected here, as it is occasionally in England, by a winter and spring fallow, and then a green crop of turnips, or some other roots; and even in England summer fallow has to be resorted to in order to clean and pulverise the soil. Here we cannot cultivate to profit large quantities of turnips, and we must resort to summer fallow to effect the improvement required, or it cannot be done otherwise. There is a possibility, by summer fallow, to improve every Canadian farm at once, if the owner can forego one year's crop, or wait for a trifle crop the second year, which he will be sure to have in value. Any old country farmer purchasing a farm here, however worn out, foul, and exhausted it may be, can have it restored by this means, sooner than by any other. It is difficult to find manure for a worn out farm, but if at once improved by summer fallow it will produce crops that will manure itself, and keep it subsequently in good order. We have already, in former numbers, suggested how assistance of manure might be procured,

by burning weeds and part of the clay during the process of fallowing. Any industrious farmer knowing his business, will not be at a loss for manure sufficient to improve the soil with the fallowing. The means are in the people's hands at any time to improve and clean the soil, if they will only employ them judiciously. A farmer need not do more in one year, than he has the means of executing well, but he might continue to do something annually, until the whole farm was gone over. We only wish that the experiment of summer fallow would have a fair trial from Canada in farmers, and we will answer for the result proving favourable, and profitable.

We have seen the *Pictorial Times* of Sept. 13. It has given some account of the disease in the potatoe crop. We do not consider that the cause of disease is satisfactorily accounted for, and therefore we do not copy the article in this number, but shall in the next, and let our subscribers judge for themselves. The disease is attributed to electricity, &c., but we have seen no change in the atmosphere or climate that would give us the slightest grounds for attributing the disease to any such cause. We still hold our opinion, as it appears in our Agricultural Reports in the present and former numbers of this Journal, and shall not change them until we see undoubted proof of our being in error.

#### THE PRIZE BULL.

We have been furnished, by a friend, with the pedigree of Mr. James Hutchison's Bull, which took the first prize at both the County and District Cattle Shows, which were held in this city last week. About nine years ago, the bull's sire was imported by the late James Miller, Esq., who, with the view of improving the breed of horned cattle in Canada, and introducing a pure Ayrshire breed, during one of his visits to the mother country, selected him and a heifer, when two years old, from the stock of Mr. Paton, of the Swonlies, near Dalry, Ayrshire, who is well known for his superior stock, and which is chiefly from the far famed breed of the Earl of Eglinton, near Kilwinning, Ayrshire, of which stock the bull is of direct descent.

The year after his arrival he took the first prize at the County show, at St. Laurent; the then existing law preventing him from standing at any succeeding show. Shortly after he was sold to C. Penner, Esq. His dam took the second prize, for one year olds, at the County show, four years ago; the first prize for two year olds, at the succeeding show; the first prize, the following year, for three year olds; and this pre-

sent year, took the first prize at both the County and District shows. His brother, the property of Mr. Kimpton, took the first prize at the show, at St. Thérèse, and the second at the District show in Montreal. The Prize Bull still remains in the possession of Mr. James Hutchison, St. Laurent.

#### ENCOURAGEMENT TO AGRICULTURE.

The following, from Chaptal's *Agriculture*, so perfectly coincides with our own ideas, that we copy it:—

“It is not sufficient to enlighten the agriculturist, in order to facilitate the progress of the art; the government has an important duty to perform towards it. It is only when intelligence and encouragement are united, that the farmer can be assured of lasting prosperity.

“Agriculture is the most fruitful source of the riches of a country, and of the welfare of its inhabitants; and it is only as the state of agriculture is more or less flourishing, that we can judge unerringly of the happiness of a nation, or of the wisdom of its government. The prosperity which a country derives from the industry and skill of its artisans, may be but a passing gleam; that alone is durable, which has its rise in a good cultivation of the soil. These facts ought to be constantly present to the mind of the government, and to influence all its measures.

“A government awake to its true interests will seek to facilitate and increase the cultivation of the soil, and to open new channels for the disposal of its products. It will protect property, by causing its rights to be respected, and punishing breaches of the laws respecting it; and it will guarantee the proprietor against arbitrary exactions. The taxes should be regulated in such a manner as to take from the agriculturist only a portion of the increase arising from his labours; for, if he have no surplus over his immediate wants, there will remain to him neither the means of improving his modes of cultivation, nor of supporting his family with comfort; neither will it be possible for him to renew his stock of domestic animals, nor to augment their number. Any government which does not leave to the farmer a great part of the profits proceeding from his harvests, soon puts a stop to the production of them, and thus realizes the fable of the goose with golden eggs.

“By encouraging improvements in agriculture, and favouring the increase of production, government enriches the agriculturist less than its own revenues; since by these means the quantity of taxable matter is increased, and the right of government recognised under all its forms, whether the article produced be employed in its crude state for domestic use, or whether it furnish the workshop of the artisan with the materials of his handicraft.”

#### FATTENING ANIMALS.

There are some rules which may be advantageously adopted in feeding animals, which however obvious they may be, are too often passed over or neglected. Some of these will be specified; and

1st. *The preparation of food.* This should be so prepared that all its nutritive properties may be all made available to the use of the animal, and not only so, but appropriated with the least possible expenditure of muscular energy. The ox that is obliged to wander over an

acre to get the food he should find on two or three square rods; the horse that is two or three hours eating the coarse food he would swallow in fifteen minutes if the grain was ground, or the hay cut as it should be—the sheep that spends hours making its way into a turnip, when if it was sliced it would eat in as many minutes; the pig that eats raw potatoes or whole corn, when either, cooked, could be eaten in one quarter of the time now used, may indeed fatten, but much less rapidly than if their food was given them in a proper manner. All food should be given to a fattening animal in such a state, that as little time and labour as possible, on the part of the animal, shall be required in eating.

2d. *The food should be in abundance.* From the time the fattening process commences, until the animal is slaughtered, he should never be without food. Health and appetite are best promoted by change of food rather than by limiting the quantity. The animal that is stuffed and starved by turns, may have streaked meat, but it will be made too slow for the pleasure or profit of the good farmer.

3d. *The food should be given regularly.* This is one of the most essential points in feeding animals. If given irregularly, the animal indeed consumes his food, but he soon acquires a restless disposition, is disturbed at every appearance of his feeder, and is never in that quiet state so necessary to the taking on of fat. It is surprising how readily any animal acquires habits of regularity in feeding, and how soon the influence of this is felt in the improvement of his constitution. When at the regular hour the pig has had his pudding, or the sheep its turnips, they compose themselves to rest, with the consciousness that their digestion is not to be unseasonably disturbed, or their quiet broken by an unwonted invitation to eat.

4th. *The animal should not be needlessly intruded upon during the hours of feeding.* All creatures fatten much faster in the dark than in the light, a fact only to be accounted for by their greater quiet. Some of those creatures that are the most irritable and impatient of restraint while feeding, such as turkeys and geese, are found to take on fat rapidly when confined in dark rooms, and only fed at stated hours by hand. There is no surer proof that a pig is doing well, than to see him eat his meal quickly and then retire to his bed, to sleep or cogitate until the hour of feeding returns. Animals fattening should never be alarmed, never rapidly driven, never be fed at unseasonable hours, and above all things, never be allowed to want for food.—*Albany Cultivator.*

## TREES FOR SHADE AND ORNAMENT.

(From the American Agriculturist.)

The spirit of utilitarianism is carried to such an extent in this country, that the ornamental is almost sacrificed to the useful. "What will be the gain thereof?" is the question propounded, when any project is proposed, instead of saying, in accomplishing this or that object, cannot the useful and the agreeable be united, thus gratifying the eye, and at the same time satisfying the pocket, which is the *primum mobile* of the age.

There is nothing that harmonizes the passions of man, quells the evil influences of trade, or adds to the happiness of the soul more than to throw around him those various charms which are found in the natural world; the green fields, the flowers, the fruits, majestic trees, with flocks and herds reposing beneath their branches, the waterfalls, in fact, the panorama of creation as it meets the eye of the agriculturist in his daily pursuits. It enlarges the soul, expands the intellect, and exalts man. If this be the effect of viewing nature in her loveliness, with how much more zest can these things be enjoyed, when our own hands have dug the soil, sown the seed, planted the tree, or trained the vine. We view them then as the fruit of our toil; and all know there is more real enjoyment in witnessing the results of our own labour, than in partaking of that which is bought with silver and gold.

These are some of the thoughts which have been suggested to my mind in reading in your May number the description of the beautiful grounds of Mr. Colt, at Pat-

erson. I can say as did the Queen of Sheba to Solomon, when she saw the splendour of his dominions, "the half has not been told of them." Mr. Colt can truly say that, under his cultivation, the barren hills have been made "to bud and blossom like the rose." It has also induced me to make a few observations on the value and importance of shade trees as an ornament to towns and villages, and to propose a plan by which the object may be accomplished with pleasure to all.

It should require no argument to prove the value and utility of shade trees in public streets and roadsides. Yet when I look at many places in the country, more especially eastward, I am pained with the thought that so little attention is given to beautifying them with noble shade trees. In too many cases, the streets are as barren of shade as the ocean. The people of New England have paid considerable attention to this subject, and, as a consequence, most of the villages are cared for in this particular. If any of your readers have passed through the village of Upper Middleton, Ct., they have probably noticed two splendid rows of maple trees running the length of the main street, which improve the appearance of the place more than would the most costly mansion. And as the inhabitants walk beneath the shade of these trees on a summer's day, and feel the cool breeze as it plays among their branches, have they not a just pride in pointing to them, and are they not a strong tie to bind the people to their native place? I mention this place as an instance, because it is my natal home; many more might be noticed, if it were necessary. Take away the elms from New Haven, and it would be shorn of its beauty.

The objection is sometimes urged, when public improvements of this kind are proposed, we may not live to reap the benefit, and what use is it to trouble ourselves about the matter. They forget that their posterity will receive it if they do not, and it is a narrow selfish soul that is not willing to do anything for the future; a spirit which, if carried out by others, would stop many of the public improvements in which mankind are now engaged. What would our country be at this time if our forefathers had acted on this principle? Trees might be planted that would serve the ends of ornament, and be a gain also to the owner. For instance, the maple might furnish sap sufficient to supply the family with sugar; the locust when grown is a valuable timber; the oak and the ash have their various uses, not to specify others that might subserve both ends, proposed to be gained by them.—Thus, in a selfish view of the case, they can be made profitable, as they would generally be set out in land that is otherwise a waste or common. I would recommend that each man adopt the plan of planting shade trees in front of his dwelling; if this were done by a few persons, others would soon see the advantages of it, and follow their example.

## FALL TRANSPLANTING.

Authorities are divided as to the propriety of fall transplanting. Some fruits, it is supposed, do not do as well as if removed in the spring. Seed-fruits, in the Middle States, may be transplanted in the fall with safety. Mr. Downing, in his new work, speaks decidedly on this point:—

"Physiologists, however, agree that the best season for transplanting deciduous trees is in autumn, directly after the fall of the leaf. The tree is then in a completely dormant state. Transplanted at this early season, whatever wounds may have been made in the roots, commence healing at once, as a deposit directly takes place of granular matter from the wound, and when the spring arrives, the tree is already somewhat established, and ready to commence its growth. Autumn planting, for this reason, is greatly to be preferred in all mild climates and dry soils; and even for very hardy trees, as the apple, in colder latitudes; as the fixed position in the ground which trees get by autumnal planting gives them an advantage, at the next season of growth, over newly moved trees."

The convenience of fall transplanting is unquestionable.

The farmer has more leisure—his ground is in better condition for working, and, while in the spring the whole work is liable to be crowded into a few days, by a sudden advance of heat, the work may be conducted in autumn, with great leisure and security.

## LOVETT'S METHOD.

This method is so named from Capt. Josiah Lovett, of Beverly, Mass., who, in his own words, has, till within the last ten years, ploughed the ocean." It may almost be called summer transplanting. It is well known that trees finish, toward the middle or last of August, their first growth; the ends of the new shoots are blunt—send out no fresh leaves, and make no more growth. But after the fall rains, there is usually a second growth. Before this second growth commences, the trees to be removed are raised—*every leaf is clipped off, and they are re-set in all respects as in other transplanting.* The tree will be materially assisted, if before re-setting, it is plunged into a tub of water, and allowed to stand from twelve to twenty-four hours. This method is desirable, because the tree, if skillfully treated in the removal, *establishes its roots before winter.*

In garden work, it is well, in fall transplanting, to cover the surface of the ground some inches deep with coarse manure, or any sufficient protection; inasmuch as the roots being tender, will not as well endure the cold as those which have not been disturbed and weakened.—*Indiana Far. and Gardener.*

## POTTING GARDEN PLANTS FOR WINTER.

Roses, Geraniums, Chrysanthemums, Cape Jessamines, &c., which have been put into the garden borders, should now be prepared for removal to the parlor for winter. This should be done before frost, else the plants will not be established in the pots when removed to the parlor, and will thrive but poorly.

Select the pot which is to receive each plant, draw a circle about the plant of the size of the pot, then thrust a sharp spade down so as to cut all the roots at the line of the circle described. Let the plant remain, watering it thoroughly; and if it droops, let it be sheltered from the sun. In a few days new roots will begin to form within the ball of earth described by the circle, and, in 3 or 4 weeks, that ball may be carefully lifted, placed in the pot for which it was measured, and the plant will go on growing as if nothing had happened to it. If one waits till frost, and then digs up the plant without a previous preparation of its roots, it will, oftentimes, not recover from the violence during the winter. But by the method suggested above, roses, &c., will go on growing and blooming through the winter.

## THE NUMBER OF PLOUGHINGS GENERALLY GIVEN IN FLANDERS FOR THE DIFFERENT CROPS.

Flanders is remarkable for the reiterated use of the plough in the production of its crops. Either in strong or light soils, it seems to prevail alike in the former, for the sake of pulverization as well as cleanliness; in the latter, chiefly for the destruction of weeds, and blending the manure with the soil. Indeed it is surprising how true can be found for the number of ploughings which are universally given. Very generally the number, for the various crops respectively, is as follows:—

For wheat, two ploughings, and two harrowings-		
Rye, two or three.....	ditto	ditto
Oats, three.....	ditto	ditto
Potatoes, four.....	ditto	ditto
Carrots, four.....	ditto	ditto
Flax, two.....	ditto	ditto
Buckwheat.....	ditto	ditto
Rape, three.....	ditto	ditto
Barley, three.....	ditto	ditto
Hemp, four.....	ditto	ditto
Turdip, three.....	ditto	ditto
Beans, two.....	ditto	ditto
For Fallows, four or five	ditto	ditto

There must be some good reason for this apparent superabundance of labour. Whatever theory or fancy might prevail amongst a few individuals, no people generally, however industrious, would voluntarily tax themselves with such an increase of trouble and exertion, if it were not conducive to profit. Upon the frequent stirring of the ground they rely, as has been remarked, not only for good tilth, but for an equal mixing of manure, and for the eradication of weeds.

## HINTS FOR THE SEASON.

Autumn is a favourable part of the year for making improvements on the farm. After the hay, the wheat, and other small grains have been secured, there is a lapse of time before the latter harvest demands attention, which furnishes a good opportunity for clearing fields of stumps and stones, making fences, improving meadows and pastures, reclaiming swamps and wet lands, digging peat and muck for manure, &c. The present season has been so dry, that wet grounds may be worked on to good advantage, unless there should soon be heavy rains.

Moist grass lands, whether in meadow or pasture, are liable to be more or less injured by the growth of bushes, rushes, and wild worthless vegetation of various kinds. The most effectual remedy for this is thorough drainage, which should therefore be the first object. Bushes had better be pulled up root and branch. They generally grow in stools, raised a little from the general bed of the field, and may be readily torn up with a *root-claw*, (or in default of that, a plough,) to which oxen are attached. When the bushes are large they should be cut, in order to give a chance to get at the roots.

Tussocks of flat wild grass, and small knobs, or bunches caused by moles, ants, &c., frequently occur on the surface of pastures and meadows. These should be cut off. If not too tough, they may be put at once into the hog-pen, or barn-yard, to be wrought into manure; or they may be piled in heaps to lay till rotten before being used; or the hardest and toughest tussocks may be burnt, as soon as they are a little dried, and the ashes spread on grass grounds, or used for other crops. They make a large quantity of ashes, especially if taken from a mucky soil, and they produce very good effects, (as we have proved,) when spread on grass, turnips or grain. The best mode of burning is to collect the tussocks into piles; commence a fire in the centre, and when a few get well on fire, heap on a large quantity. The fire should work slowly, with as little flame as possible.

What is called a *hog-hoe*, is a proper tool for cutting tussocks. It should be ground to a sharp edge, to do the work easily and well. We have seen at the implement warehouses in Boston, a tool to be drawn by oxen or horses, for shaving excrescences from pastures and meadows. We have no personal knowledge of its operation.

Peat or bog earth, designed for compost, or for spreading on cultivated fields, is much better for being dug some time before being used. The action of the air, the frost, and the rains, dissipates its sourness, and a partial fermentation or decomposition takes place, by which it is pulverized, and brought into a good state to be applied to plants. The banks of ditches should be hauled to the barn-yard, or piled on dry land. If the ground is too soft and miry to admit of a team going on, let the muck remain till winter, and the ground is sufficiently frozen to bear a yoke of oxen and sled.

Peat or muck that has undergone a fermentation, mixed with ashes and saturated with urine, is one of the best manures for gardens and nurseries that can be used, as it contains few or no seeds that will grow on dry ground.

The process of improving land by paring and burning, though seldom practised in this country, we feel sure, from what we have seen, might be adopted in many cases with advantage. The operation consists in cutting a thin slice from the surface of sward or old grass lands. The sods are dried and burnt, and the ashes spread over the land. It is most beneficial to cherty soils and those impregnated with iron—the iron being converted by the fire.

into what is called a peroxide, in which state it is harmless to vegetation.

The advantages of paring and burning are several; it destroys the seeds of weeds, and much of the foul growth with which the land may be filled; it also destroys many insects and their eggs, and furnishes in the ashes and calcined earth, a powerful manure, impregnated with alkaline salts and carbonaceous matter, which is found highly beneficial in correcting the tenacity of clays and converting them into friable loams.—*Alb. Cult.*

### A LECTURE ON THE APPLICATION OF CHEMISTRY TO THE DETAILS OF PRACTICAL FARMING.

BY ALBERT JAMES DERNAIS.

This clever lecture, which was, at the request of Sir Oswald Mosley, Bart., delivered at the Burton-on-Trent Farmers' Club in April last, has been, at the request of several of the friends of agriculture, published in a cheap form. There can be no doubt but the careful perusal of this lecture will prove of material service to establishing an understanding to the right principles of agriculture.

The importance and advantages of the arrangement and compilation of the manure heap are too well known to require any observation from us; but we cannot lay by this practical work without giving the author's directions for preparing the farm-yard heap:—

"It should be a rule to heap it on as small a space and as compact as possible. The ground on which it is placed should consist of a stiff clay, or be bricked over. It should commence about half a foot below the surrounding ground, and be situated so as to cause all the water from the manure to run into the tank. The conduit leading to the latter should be well covered in, so as not to allow spring-water or rain-water to collect in it. A layer of gypsum is now to be spread on the flooring, and the heap is to be commenced by covering the whole bottom, with the exception of about half a foot on each side. On every foot height of manure a layer of gypsum is to be spread, sufficiently thick to appear white. When the heap is completed, or before, the contents of the tanks are to be poured on by degrees, in quantity sufficient to moisten the heap well, but so that little will run back into the tanks. By these means the following advantages will be obtained: Firstly, the cartage of the urine will be rendered unnecessary, and some labour and expense saved; secondly, the gypsum of the farm-yard heap will be dissolved; and thirdly, by the addition and evaporation of the water of the urine, the decay of the manure will be hastened. If the method recommended of strewing the stable-floorings with gypsum be followed out, of course but a small quantity of it will be necessary; a thin layer may then be strewn on every two feet high of the heap; and when completed, the top and sides should be sprinkled with it. The heap itself should not be higher than six feet, for many reasons.

### SAVING SEEDS.

It has often occurred to me that sufficient care has not been exercised in saving seed of vegetables from the finest part of the crop. If we breed live stock, of whatever kind, we invariably select the parents from the best of our flock or stud. So with regard to flowers: no one would sow seed from inferior flowers, but would select from the best specimens; and it is by following up this system that great improvements have been made. Thinking the same effects would accrue from a more careful selection of culinary seeds, and that a much greater degree of productiveness might be attained, about three years ago I began an experiment with long-pod beans. I carefully selected the finest and fullest pods for seed, taking none with fewer than five beans in each. Next year I had a good sprinkling of pods with six seeds in each; these were saved for seed. Next year I had many six-seeded pods, and some with seven. Following up the same plan, I find this season many more six and seven-

seeded pods, than of a less number, and some with eight seeds! There are still a few plants which produce five-seeded pods, and it is worthy of remark, that the five-seeded plants have seldom a six-seeded pod upon them, but all fives; on the contrary, a six-seeded plant has generally all the pods bearing six beans or more.

As the seed-saving season is now coming on, perhaps these hints may induce others to adopt the plan. If the same course were adopted with our grain crops, I have no doubt more productive varieties might be procured.—*Correspondence of Gardener's Chronicle.*

### THE ALPACA.

It may be satisfactory to persons interested in the naturalization of this useful animal in the British Isles, to learn that some of the latest experiments have been singularly successful, fully establishing the fact that upon our soil the fleece improves in quality and in weight. G. A. Stirling, Esq., of Craigbarnet Place (Lennoxtown,) near Glasgow, lately sent 15 lbs. to Yorkshire, the residue of two fleeces clipped last year, the quality of which, although not finer than the best sorts imported, was, nevertheless, more glossy, and of one uniform jet colour. This small parcel was since spun by Mr. James Whitley, of Morton Mills, and manufactured by Gregory Brothers, of Shelf, into a web of thirty yards, mixed with ruby silk, the figure, rose, shamrock, and thistle, (Queen's pattern,) on alternate stripes of black and ruby. This is the second instance of home-grown alpaca being manufactured in this country, the first having been the Queen's, in last December. About two months ago Sir Robert Heron, M.P., of Stubton, near Grantham, Lincolnshire, sent down a black fleece, just shorn on his own estate, with the view of ascertaining its mercantile value, which, by professional men, was pronounced the most splendid they had ever seen. It weighed 17 lbs., a most extraordinary weight, the fleece in Peru seldom or never exceeding 10 lbs. This remarkable specimen of home-grown was sold to Messrs. Gregory Brothers at 2s. per lb. At the same time Sir Robert forwarded to the manufacturers a *machurga* fleece, white, and weighing 8 lbs., clipped from the hybrid, obtained by crossing the llama with the alpaca. This animal was imported from Peru, and purchased at Liverpool in the winter of 1842, and may justly be considered a curiosity, as being a rare specimen among us. In Peru this mixture is frequent, but, like the mule, the offspring is barren, and never used unless as a beast of burden. The fleece in question possesses some of the properties of the alpaca, such as its length, and a partial glossiness, mixed with the harsh hair and kemp of the llama, which, of course, is not a wool-bearing animal. The difference between this and the alpaca fleece is so great, that it is difficult to say what mercantile value can be set upon it. Samples of the three fleeces above mentioned, together with patterns of the Queen's textures, including her favourite plaid, have been deposited at the Polytechnic.

### LIQUID MANURE.

The greatest care should be taken to make the most of this valuable article. The channel which is behind the cows, in every well made cow house, may be filled daily, or morning and evening, with bog earth, or earth of some kind, which will absorb the fluid, and thereby be converted into excellent manure; or a tank, either a hog-head or a cistern built of brick and cemented, may be placed where the steepage from the cattle and horses can be conducted by drains; the tank should be covered, and have a pump in it, by means of which the fluid can be

raised. Pouring it over the compost heaps is perhaps as good a way as any of disposing of it. To this tank, the urine and suds from the house, water in which vegetables are boiled, &c., should be conveyed. This is a branch of economy seldom attended to by farmers, and the consequence is, as much valuable manure is wasted about most houses as would increase the product of the farm to a great amount.

According to Liebig, 100 parts of human urine are equal to 300 parts of the fresh dung of horses; and we learn from the same high authority, that the liquid and solid excrements of an individual, annually, contain nitrogen necessary for 800 lbs. of wheat, rye or oats, or 900 lbs. of barley. We are hereby enabled to appreciate the industry and sagacity of the Chinese in preventing the loss of this valuable species of manure.—*New Farmers' Journal.*

**SAVING CORN IN DAMP WEATHER.**

*To the Editor of the West Briton.*

Sir,—A field of ripe oats, near Mutley, cut wet, and the weather continuing the same, was at last carried, and stacked in layers, with dry straw between. On taking abroad the rick, the grain was found in excellent condition, not sprouted, nor injured in the least; and what answered with so precarious a grain as white oats, will stand a better chance with wheat or barley. When dry straw or reed is all used up, other dry stalks or even shavings might answer. But where, as will sometimes happen, nothing of the kind is to be had, there is still a method of drying the corn in sheaf. In Russia and the north of Europe this is done by kilndrying, for which a very simple method is described in Brit. Husb. vol. 2, p. 206, improvable in this country, by the substitution of coke for their wood fuel; but still liable to the charge of fuel, and of a person to look after the fire, and to the danger of a few straws falling in, and kindling the whole pile. In the laboratory we are in the practice of drying materials, which do not bear heat, by aid of substances having strong attraction for moisture; one of which, LIME, being largely used in manure, might be employed for drying the corn at no other cost than the labour. If the rick be made hollow, with the grain turned inward, a sufficient quantity of fresh quicklime placed within, and then all closed in from bottom to top, and covered over to exclude the external air, the lime will rapidly dry the air within, which will as rapidly draw moisture from the corn, and so continue until the corn is dry, or the lime saturated. And as quicklime will absorb about one-third its weight of water, a ton of lime will take between six or seven cwt. of water, and thus probably dry six or seven tons of corn and straw; for all this water must come from the corn, if the external air is well excluded, and the lime raised from the soil by a bed of stones, gravel, or straw. The lime must not, of course, touch the corn; and therefore room should be left for it to swell in slaking. The intelligent farmer will understand better than I can the details of construction of such a rick; I need only suggest that it might be best raised in the stack-yard upon dwarf walls, with an opening to throw in the lime, which should then be immediately closed up, but opened occasionally to turn over the lime. If the latter be all slaked before the corn is dry, it should be withdrawn, and a second quantity put in. The rick might be steadied, to bear the wind, by poles across the inside; or when dry, might be filled in, from part of the same, or other dry corn. Or it might be raised temporarily on the field itself, where it would dry the better for being based on a bed of dry straw.—Yours, &c., J. PRIDEAUX.

**ON DESTROYING THISTLES.**

*To the Editor of the Mark-Lane Express.*

Sir,—In reply to your young correspondent, who wishes to be put into possession of the secret for destroying thistles, I beg to inform him the only way to do so effectually is to eradicate them: but as there is some difficulty in doing this, owing to the nature of the root, I advise him to adopt my plans, with either of which I guarantee him success. As the perfect extraction of the root is next to impossible. I find the only way to deal with them is to be perpetually cutting them down whenever they make their appearance on pasture ground, which eventually so weakens the root, that it dies: or if they appear on arable land, the subsoil plough will do their business for them; which I can vouch from my own experience of this year.—Your young correspondent should pay particular attention to his hedges and dyke banks, at this season especially, to see the thistles there do not ripen and shed their seed, otherwise all his labour to keep them down in his fields will be endless, and produce nothing but mortification and disappointment. This circumstance is not sufficiently attended to by farmers in general. I remain, Sir, your obedient servant, SALOPIENSIS.

**VALUE OF REAL PROPERTY IN SCOTLAND.**—A volume recently published gives the annual value of real or heritable property assessed to the income tax in the year ending 5th April, 1843. This return, when compared with the returns of 1815, affords authentic data from which a good estimate may be formed of the progress of Britain in wealth during the last twenty-eight years. The property assessed is classified under twelve heads, which we insert with their respective amounts. For the sake of simplicity we omit shillings and pence, and on this account the aggregate sums do not exactly agree with the details.

	England.	Scotland.	Total.
Lands.....	£40,167,088	£5,586,527	£45,753,615
Houses.....	35,556,399	2,919,338	38,475,738
Tithes.....	1,760,330	—	1,760,330
Manors.....	152,216	—	152,216
Fines.....	319,140	901	320,042
Quarries.....	207,009	33,474	240,483
Mines.....	1,903,794	177,592	2,081,387
Ironworks.....	412,922	147,412	559,435
Fisheries.....	11,104	47,809	58,914
Canals.....	1,220,202	77,891	1,307,093
Railways.....	2,417,609	181,333	2,598,942
Other Property.	1,166,815	309,480	1,776,296
	85,802,735	9,481,762	95,284,497

The annual value of the property assessed to the income tax in 1815 was..... 53,495,368 6,642,955 60,138,323

The increase in the twenty-eight years, from 1815 to 1843, is greater than it appears in the table. In 1815 the tax fell upon all incomes above £50, while at present all below £150 are exempted. It might be supposed that there are few proprietors of land entitled to exemption on this ground, but Mr. McCulloch estimates the number of landed proprietors in England at 200,000, and their average income at no more than £170, from which it may be inferred that a considerable number who were taxed in 1815 now pay nothing.—*Scotsman.*

**TO FATTEN POULTRY.**—The following will be found a quick and excellent food for fattening chickens. Set rice over the fire, with skimmed milk; let it boil till the rice is quite swelled out, then add a spoonful of sugar.—Feed them with this three times a day, giving them at once only as much as will fill them. Give them clean water or the milk of rice to drink. By this method the flesh will have a clear whiteness, which no other food gives; and when it is considered how far a pound of rice will go, and how much time is saved by this mode, it will be found to be cheap. A quantity of charcoal, broken in small pieces, and placed within reach of poultry, increases



their appetite and promotes digestion.—*J. McIntosh, in Gard. Chron.*

**CURING BACON.**—A correspondent asks for information on this subject. I think it is generally admitted that York bacon is as good as any: I will therefore give your correspondent my plan. After being killed it is allowed to hang 24 hours before being cut up; I then rub 1 lb. of saltpetre on a 20 stone pig, (of 14 lbs. to the stone,) and 1, 1½ or 2 stones of common salt, taking care that it is well rubbed in: it is then laid in a tub kept for the purpose. After having laid a fortnight, it is turned over and more salt applied, say half a stone. It then remains a fortnight longer in the pickle tub; it is then hung up in the kitchen, where it remains two months to dry; should the weather be very dry, a shorter period will suffice.—After being taken down, the inside is washed over with quick lime and water, to preserve it from the fly; it is then removed into a room not used by the family, away from heat, and where it will be perfectly dry, and is ready for use at pleasure. The smoking system is not adopted in York, at least not in that part from which I write.—The plan I have given you never fails, if done with care. The saltpetre and salt should be of the best quality, for upon these articles depend your success in producing a good article for the table.—*Correspon. London Agricult. Gazette.*

**CHEAP MANURE FOR TURNIPS.**—Bran (the husk of wheat) has been tried experimentally, in comparison with bones at a like cost per acre, and the part of the field so drilled proved superior to that part drilled with bones. It is recommended not to use more than four or five cwt., lest the fermentation engendered thereby should destroy the seed; this quantity, at its present value, 5l. per ton, would manure an acre of land at the expense of 20s. or 25s., and as the bran could be obtained at any time from the nearest miller, its whole expense would be its first cost—a point of great consideration in the midland counties.—We need not send to South Africa for guano to be sold at 10l. per ton if we had sufficient manure at our own door to be purchased at 5l. per ton, more especially as by taking the bran out of the market it has the two-fold benefit of producing greatly increased crops, and indirectly by allowing us to obtain a better sale for the hay and oats, which must be substituted for the bran so used.—*Gardener's Chronicle.*

**ROMNEY FAIR** was well attended, although the weather was most unfavourable, and a tremendous storm in the middle of the day drove everybody into shelter. The stock fair was very brisk, and a good clearance was effected at high prices. The following is a comparative table of the number of sheep penned every year since 1840, including the present one, in which it will be seen the numbers were much short of those of former years:—

Description.	1840.	1841.	1842.
Lambs.....	7157. 17s. 9d.	6149. 19s. 0.	2759. 15s. 1d.
Ewe tags.....	20. 28s. 0d.	95. 31s. 6d.	None.
Wether tags.....	457. 30s. 0d.	413. 31s. 10d.	112. 24s. 0d.
Old Sheep.....	1233. 26s. 0d.	975. 29s. 0d.	430. 25s. 0d.
Fat Sheep.....	183. 40s. 9d.	193. 40s. 7d.	109. 42s. 6d.
Rams.....	14. 65s. 6d.		
Maiden barrens.....	35. 35s. 11d.	11. 25s. 0d.	50. 31s. 0d.
Sheep &c., penned	15,030	14,324	16,146
	1843.	1844.	1845.
Lambs.....	2395. 16s. 0d.	8180. 16s. 3d.	6165. 21s. 2d.
Ewe tags.....	193. 23s. 6d.	173. 25s. 6d.	231. 28s. 9d.
Wether tags.....	601. 26s. 3d.	769. 26s. 0d.	824. 32s. 2d.
Old sheep.....	937. 24s. 6d.	944. 25s. 9d.	871. 31s. 2d.
Fat sheep.....	52. 35s. 3d.	219. 34s. 6d.	952. 45s. 1d.
Maiden Barrens.....			145. 38s. 0d.
Sheep &c., penned	15,339	14,673	12,487

**TIME OF MANURING GRASS LAND.**—What is the best time of the year for applying farm-yard manure to Grassland? there is a great variety of opinion, as well as practice, in this neighbourhood. Most people here seem to prefer putting it on in the Spring, the objection to which is, that should the spring prove a dry one, the manure gets its goodness dried out of it, does very little good to the crop, and is a great annoyance in hay-time; others apply it late in the Autumn (after they have eaten of their after-grass,) and then vegetation being dormant, the best of the manure is washed away and

carried off by the drains without being of any service whatever. Here, with the help of irrigation and stimulants, I am able to get two crops of hay in the year, and my plan is, to put in the manure from the farm-yard as soon as the second crop is cleared, say in the middle of August; if, however, the weather should be dry at the time, it is not spread, but left in the heaps until the rains set in, when it is immediately spread, and at that time vegetation is so vigorous, that it is out of sight in a very short time. It appears to do so much more good, that I think even when only one crop is obtained, it is better to lose the after-grass (or the pasturage of it) rather than lose almost all the benefit of your manure; and so great is the difference produced between manuring in August and October, that here the former has grown over, and out of sight in a fortnight, while the latter is still as visible as on the day it was applied, and the stimulus it has given to vegetation is scarcely perceptible. It is much to be wished that some of our expert operators would turn their attention to hybridizing some of the Cerealia. I think that spring wheat may be crossed with some of the more valuable kinds, and, if so, there is great reason to hope for early and good varieties.—*T. G.*

**NEW LOCOMOTIVE AGENCY.**—A letter from Philadelphia, published in the *Memorial de Rouen*, has the following:—"William Evans has resolved a problem, which must overturn our present system of railway and steam-boat propulsion. By means of enormous compression, he has succeeded in liquifying atmospheric air, and then, a few drops only of some chemical composition, poured into it, suffice to make it resume its original volume with an elastic force quite prodigious. An experiment, on a large scale, has just been made. A train of twenty loaded waggons was transmitted a distance of sixty miles, in less than an hour and a quarter—the whole motive power being the liquid air inclosed in a vessel of two gallons and a half measure: into which fell, drop by drop, and from minute, to minute, the chemical composition in question. Already, subscriptions are abundant, and a society is in course of formation. The inventor declares, that an ordinary pucket-boat may make the passage from Philadelphia to Havre in eight days, carrying a ton of his liquid air. A steam-engine, of six-horse power, will produce that quantity in eight hours."

At the late rent audit of Ambrose Hussey, Esq., M.P., that gentleman allowed his tenants the amount paid by them as Income-tax, and signified his intention of doing so in future; and this he did unsolicited, and from a conviction that it was but a just consideration towards his tenants, they having no power of appeal against the payment, even though capable of proving a loss of income.—*Salisbury Herald.*

In 1844 there were 1600 cottages in Preston empty; in 1845 there is scarcely one to be had!

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