ADDRESS

TO

THE SMALL FARMERS

ON THE

ESTATES

OF THE

Right Hon. the Earl of Gosford

AND

MAXWELL CLOSE, Esq.

IN THE

COUNTY OF ARMAGH.

BY

WILLIAM BLACKER.

THIRD EDITION.

ARMAGH:

JOHN M'WATTERS, 17, ENGLISH-STREET;
ARCHER, BELFAST;
MURPHY, NORTH FREDERICK-STREET, DUBLIN.

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1834.

[ENTERED IN STATIONERS'-HALL.]

CONTENTS.

PREFACE.

It is now a little more than two years since the following Address was printed, being merely intended for circulation among the tenants upon the Estates of the Earl of Gosford, and Colonel Close, but the manuscript having been seen by one or two friends, the subject became talked of, and several landed proprietors having expressed a desire to obtain copies for distribution among their tenantry, the idea occured of printing off an extensive second edition, and trying to gain something by the sale for charitable purposes; accordingly, 2,000 additional copies were printed, which in a few weeks were all sold. This favourable reception by the public, together with a continued enquiry for further copies, would have sooner induced me to bring forward another edition, had I not considered it better to defer such a proceeding, until sufficient time had elapsed to prove whether the plan laid down, might appear to be attended with such results as would be likely to recommend it for general adoption. That such results have taken place, will, I think, be very apparent to all those who have been in any degree acquainted with the Estates in which the experiment has been tried, upon

a very cursory inspection of the different farms. Upon examination, it will be seen that the ruinous practice of successive corn crops has been, I may say, entirely superceded by the introduction of clover, and grass-seed, and vetches, and that turnips are become very generally in use for the winter feeding of stock, and, in many instances, to the extent of stall-feeding beef cattle for the Home, or the Liverpool Market; and the tenantry in general, upon both estates, will be found exerting themselves to the utmost, to increase their stock to the extent which they now find, the crops mentioned will enable them to support, and a spirit of industry and activity is set on foot, that cannot but be attended with the very best effects; even the passing observer will, I think, find his attention attracted by the rich appearance which the luxuriant clover crops give to the country, where the poorest pasture was formerly alone to be seen, and will be struck by the frequent recurrence of the small patches of turnips adjoining the cottages, so rarely to be met with elsewhere. The great difficulty at present felt by the tenants is, in procuring cattle to consume the increased quantity of food, which they now find themselves possessed of—for, notwithstanding every thing that could be said upon the subject, they could not be persuaded of the great additional stock which the same ground would

enable them to maintain, under the system recommended, compared with what they were formerly able to keep—and this difficulty has been much increased by the unusual high price of cattle this season, which has prevented the poorer class from being able to purchase. There are, nevertheless, many satisfactory instances of the increase of stock, half a dozen of which, in different quarters of the estates, I think it right to mention, in order to give the public that opportunity for investigation, which it is desirable should be afforded:—

Thomas Ingram of Drumboney, on the road from Markethill to Dundalk, upon 23 English acres, keeps 2 horses, 9 cows, 1 heifer, 2 calves, and 4 pigs. He was always a good farmer, but by house-feeding, has been able to increase his stock, *last* year, 2 cows, and *this* year, 3 cows, 1 horse, and 1 heifer, and has as much crop as he formerly had.

James Mullholland of Carrickgollogly, near Baleek, holds 6 English acres, upon which he has 3 cows, 1 calf, and 1 pig;—formerly he was only able to keep 1 cow.

Thomas Alexander, Corlust, near Clare, holds 5 English acres, which he lately purchased from a man who was only able to keep 1 cow; but, by sowing green crops, he is now able to keep 2 cows, 1 heifer, 2 calves, and 2 pigs.

John Hogg of Drumgaw, near Armagh, keeps now in the house, 4 cows, 1 calf, and 2 pigs;—formerly he was only able to keep 1 cow.

Pat. Farrell, Garvagh, on the road from Markethill to Hamilton's-bawn, has now 2 cows upon 5 English acres, and 1 pig;—formerly he had no cow at all.

Widow Brannigan, near Hamilton's-bawn, holds 2½ English acres; keeps, by means of house-feeding, 1 cow, and 1 pig, and has oats, flax, and potatoes for herself and daughter; had no cow formerly whatever.*

In alluding to the foregoing instances, I assume the increase of the stock kept to be a sufficient proof of the increase of the growth of green crops; and, in like manner, the increase of green crops to be a sufficient proof of *improved cultivation*, and, of course, *of the success of the plan recommended,—which*, from the experience I have now had of it in several counties, I feel no hesitation in saying, may be successfully introduced into any part of Ireland. For several years I had been turning my attention to the improvement of the tenantry on the estates alluded to, and had made several unsuccessful attempts to introduce a better system of agriculture, by circulating the different works published on that subject, and offering premiums for those who would

* For the particular statements of some of these individuals, see Appendix.

adopt the improvements recommended; but I had the mortification to find there were no claimants for the prizes proposed, and that every attempt I made was a complete failure. At length, it occurred to me that, by writing a short Address to the Tenants, their attention might be drawn to the defects of their present system, and by following it up with the appointment of an agriculturist for the special purpose of instructing them, and moreover, by permitting him to grant a loan* of lime to such as followed his instructions, for the purpose of replacing the manure which he might require for the cultivation of green crops, and adding my own personal influence, I might perhaps have better success. Accordingly, the following Address was printed and circulated, with an effect far exceeding my most sanguine expectations; and it appears to me this plan of bringing about the consideration of the matter, has greatly the advantage of a personal discussion. People do not like to see what they have considered to be right, from their infancy, the propriety of which they never had a thought of doubting, cried down as erroneous, nor do they like to find themselves worsted in the arguments they advance in their support, so that a kind of

* When I first began to lend out lime, almost every person told me I should never get payment of it, but the result has justified my confidence in the tenantry, who are now bringing in the amount as it becomes due, without my having been obliged in any one instance to have recourse to any compulsory process.

obstinacy is awakened, which the silent attacks of a writer, in print, is not liable to create; and further, the circulating of a number of Pamphlets by the landlord, is sure to make their contents a matter of general conversation among the tenantry, which in itself is a great point gained; as, in the discussion, even among themselves, some light is sure to be thrown upon the subject: and if even one tenant in a hundred should be led to see the error of his system, his single example, and the success that would inevitably attend the change, would be well worth, in any estate, the trifling expense of the general distribution. Be that as it may, I found the Address fully to answer the purpose intended, and it was generally admitted to contain what was beneficial and right, and that if it could only be carried into execution, a great advantage would certainly be gained. The great fear of lessening their potatoe crop being removed, by the loan of lime, which more than replaced all the manure that was demanded, and my own influence being exerted to the utmost, above 300 small farmers in each estate were induced to make the trial the very first year, and the season proving favourable for the turnip crop, it was most abundant, and was completely established in the opinion of the country, and the extent since sown has been each season increas-

so that I expect, in another year, the quantity

sown will be equal to the support of the proper stock which I calculate a farm requires—that is, a cow for every three acres of arable land; but the improvement in the agricultural system has not been confined to the growth of turnips.* Mangel wurzel, vetches and clover have been also introduced, and the tenants have been shown that the latter, which they very generally conceived would not grow, had been heretofore only prevented, by being sown on land exhausted by corn crops; and now, being found to thrive when sowed with first grain crop after their potatoes, it has, as I have stated, almost entirely banished the custom of taking two crops of grain in succession, which is a change of the most important nature†.

In order to assist the undertaking, both the EARL of GOSFORD and COLONEL CLOSE offered premiums for

* To give a more distinct idea of the working of the system recommended, I introduce in the Appendix a letter from Mr. Still, Agriculturist on the Estate of His Grace the Lord Primate, in County of Cavan. It was written to me as having been the person to recommend him, and without the most remote idea of its publication. Mr. Still only commenced operations this Spring, and promises to be eminently successful. I have also supplied with Agriculturists, several other landed Proprietors, who are making trial of the system, with every prospect of success.

† In order to expedite this result, I adopted the plan of lending out clover and vetch-seed upon a credit of six months, on condition that the former was sowed with FIRST grain crop on the manured land, and that the latter should be substituted in place of a SECOND grain crop, where the sowing of clover with the first crop had been neglected. This plan has been found very efficacious, and by opening an account with a London Seedsman, I got the desired credit from him, so that I was nothing out of pocket.

house feeding the cattle; at the commencement, there were but two tenants in the estate of the former, and none in the latter, who were able to enter into the competition. The 2d year there were about 50 competitors—at present, I should think, there cannot be less than 3 or 400, who feed their cattle either entirely or for the most part in the house—and, next year, from the great quantity of clover-seed sown this Spring, I think there will not be a tenant on either estate who will not feed his stock upon that plan. I consider it quite unnecessary to say anything in proof of the great advantage of having such a system introduced, and shall only add that, if the Agent is a person of good feeling, he will be amply repaid for the great personal attention he must at first bestow in introducing the system, by observing the growing prosperity of those placed under his care by its operation. But this is not the only incitement—it is well known what difficulty and vexation attends the collection of rents from a poor tenantry, and what painful feelings the Agent is often obliged to undergo, in enforcing payment from many who are ill able to afford it, and perhaps being obliged to dispossess others, from their entire inability to pay anything, and thus leaving whole families exposed, houseless and friendless, to want and misery. From all such harrowing sensations he will soon be relieved, by the operation

of the system I recommend. As an example, I might mention its effects in Lord Gosford's Cavan Estate, consisting of about 8,000 acres. The Estate being greatly in arrear, I had tried every means short of those violent measures above alluded to, in order to obtain punctual and regular payments, but without effect; and notwithstanding the estate was moderately let, the arrear was rather increasing than diminishing; but last year being the second since commencing the system I have described, the entire year's rent and part of the arrear was paid without difficulty; and this year, my assistant, within these few weeks, has returned, after a stay of three days, and has brought with him, what overpays the rental by £200; and from £200 to £300 will yet be received before the year expires; and I confidently expect the entire arrear will be paid up before this time next year — so that personal motives are not wanting to incline both Agent and Landlord to fairly try the plan proposed.

In my own case, I must say I have derived inexpressible pleasure, from seeing many deserving people restored, through its instrumentality, to a prospect of comfort and independence, who had been reduced, from various causes, to great poverty and wretchedness, and seemed so far depressed by their situation, as to have neither health or hope left to animate them to further

exertion. I do not, however, wish to be understood, that much may not occur to try the temper and exercise the patience of the Agent, in the course of the undertaking; but the difficulties he may expect to meet with, are almost always to be surmounted by calmness and perseverance, and are, for the most part, but a temporary annoyance; whereas, the recollection of the good he may have effected, is the source of continued gratification;—and, if such feelings belong to the Agent, what must be the enjoyment of the Landlord who resolves to look into the situation of his tenantry, and, by this means, to lend a helping hand to their relief! The practice of seeing and relieving distress, not by unproductive alms-giving, but by affording the means and encouraging the spirit of industry among those whom sickness and misfortune may have depressed and impoverished, would soon create, in the Landlord, that interest in the welfare of his tenants, which acts of kindness and benevolence are always sure to excite in the breast of the benefactor towards the benefited; and whoever thinks that an Irish tenantry (once convinced of the friendly disposition of their Landlord) would not repay such proofs of his regard with the most sincere and ardent attachment, knows little of their nature. Ties of affection would thus, ere long, draw together again those classes in society which at present seem too

far removed, if not actually opposed to each other, and content and harmony, spread around, would lend new charms to a country residence. The *sports of the field* and the *pleasures of the chace* would no longer be the *only* attractions to allure the man of fortune to visit his Estates — though even these would be benefited by such an improved state of things. The hired keeper is but a poor substitute, in the preservation of his game, for the watchful guardianship of an affectionate tenantry, whose kind feelings and warm attachment would give aa additional zest to *those enjoyments of health;* whilst the recollection of the content, the comfort and the happiness spread around him, might prove, perhaps, the most effectual *alleviation to the pains of sickness*, and furnish the most soothing subjects *for the pillow of reflection.*

Many Landlords there are, I have no doubt, who, with the best possible inclinations, have heretofore shrunk from making any attempt to better the situation of those under them, from a firm conviction of the utter hopelessness of the undertaking. All such, I trust, will peruse, with satisfaction, the following Address, which forms the groundwork of a plan for carrying these good intentions into execution—a plan which has not only been proved to be successful in practice, but which [illegible]ied into effect without involving them

in any permanent outlay, or putting them to any extravagant expence; and, moreover, may be given up in a moment, when no longer considered necessary, and calculated to promote their own particular interests, as well as to provide for the independence and improvement of their tenantry. That many may be encouraged to make the attempt, and that their attempts may be attended with all the success they could desire, is the sincere and ardent wish of the writer,

WM. BLACKER.

December, 1833.

TO THE

SMALL FARMERS

ON THE ESTATES OF

THE EARL OF GOSFORD

AND

MAXWELL CLOSE, Esq.

IN THE

COUNTY OF ARMAGH.

You are all well aware of the disposition which at present very generally exists, on the part of landlords, to diminish the number of tenants on their estates, and to increase the size of their farms. It is not here necessary to inquire into the reasons which influence them in this desire: it is sufficient for my present purpose to say, that, if such a plan were extensively acted upon, the result must be the total ruin of all the small holders and cotters, who, in many cases, are as industrious as any other members of society.

I consider myself most fortunate that I am not obliged to act, at present, upon the system above alluded to, and that my employers, however they may feel resolved not to continue on their estates persons who will not endeavour to better their situation, are nevertheless, determined not to part with any tenant who is *industrious* and *thriving;* and, impressed with this kind feeling, are anxious that I should make trial whether any thing can be done to reclaim *those* of an

opposite description, by stimulating them to greater exertion, and putting them upon some plan of supporting themselves and their families with greater comfort and respectability.

The only way to do this is, in my mind, by introducing such a system of agriculture as would bring the entire of the small farmers' holdings into a productive state, in place of allowing nearly the half of them to remain nominally in *grazing*, but in reality producing *nothing;* and, as this cannot be done without manure, and manure cannot be had without having cattle, and feeding those cattle in the house, I have thought it advisable, in the first place, to make an extract from a recent work upon that subject, to show upon what a trifling portion of land small farmers may, with good management, support a cow the year round, and thus prove to them how easy it would be to add to their stock in this respect, upon which the comfort of their families, and the improvement of their farms, must always so much depend:—

EXTRACT FROM A SMALL WORK, WRITTEN BY MR. COBBETT, ENTITLED "COTTAGE ECONOMY."

"As to the *use* of *milk*, and that which proceeds from milk, in a family, very little need be said. Whether the milk of a cow is to be consumed by a cottage family in the shape of milk, or whether it be made to yield butter, skim-milk, and butter-milk, must depend on circumstances.

"The cases vary so much, that it is impossible to lay down rules for the application of the produce of a cow, which rules shall fit all cases; and I shall, therefore, only make an observation on the *act of milking*, before

I come to the chief matter; namely, the *getting of the food for the cow.* A cow should be milked *clean.* Not a drop, if it can be avoided, should be left in the udder. It has been proved, that the half pint that comes out *last*, has *twelve times*, I think it is, as much butter in it, as the half pint that comes out *first.* I tried the milk of ten Alderney cows, and, as nearly as I, without being very nice about the matter, could ascertain, I found the difference to be about what I have stated. The udder would seem to be a sort of a milk-pan, in which the cream is uppermost, and, of course, comes out last, seeing that the drain is at the bottom. But, besides this, if you do not milk clean, the cow will give less and less milk, and will become drier much sooner than she ought. The *cause* of this I do not know, but experience has long established the fact.

" For a cottage, a cow of the smallest sort common in England is, on every account, the best; and such a cow will not require above 70 or 80 pounds of good moist food in the twenty-four hours.

" Now, how to raise this food in one rood or forty square perches of ground is what we want to know. It frequently happens that a labourer has *more* than one rood of ground; but I am here, for simplicity's sake, to suppose that he have forty square perches of clear unshaded land, besides what his house and sheds stand upon; and that he has nothing further in the way of means to keep his cow.

" I suppose the forty square perches to be *clean* and *unshaded;* for the ground is to be *clear* of trees; and, in the spring, we will suppose it to be *clean.* Then dig

it up *deeply*, or, which is better, *trench* it, keeping, however, the top *spit* of the soil *at the top*. Lay it in *ridges* in April or May, about two feet apart, and made high and sharp. When the weeds appear about three inches high, turn the ridges into the furrows *(never moving the ground but in dry weather)* and bury all the weeds. Do this as often as the weeds get three inches high; and, by the fall, you will have really clean ground, and not poor ground.

"There is the ground, then, ready. About the end of July or the 1st of August, prepare a square perch of your ground, and put some *manure* in it, (for *some* you must have,) and sow one half of it with Early York Cabbage Seed, and the other half with Sugar Loaf Cabbage Seed, both of the *true* sort, in little drills, at eight inches apart, and the seeds thin in the drill. If the plants come up at two inches apart (and they should be thinned if thicker) you will have a plenty. As soon as fairly out of ground, hoe the ground nicely, and pretty deeply, and again in a few days. When the plants have six leaves, which will be very soon, dig up, make fine, and manure another perch or two, and prick out the plants, 4,000 of each, in rows at eight inches apart, and three inches in the row. Hoe the ground between them often, and they will grow fast and be straight and strong. I suppose that these beds for plants take four perches of your ground. 1st October, or, as the weather may serve, a little earlier, or later, lay some manure (of which I say more hereafter) between the ridges in the other thirty-six perches, turn the ridges over in this manure, and then transplant your plants on the ridges, at fifteen inches

apart. Here they will stand the winter, and you must see that the slugs do not eat them. If any plants fail you have plenty in the bed where you pricked them out; for your thirty-six perches will not require more than 4,000 plants. If the winter be very hard, and bad for plants, you cannot cover thirty-six perches; but, you may the *bed* where the rest of your plants are. A little litter, or straw, or dead grass, or fern, laid along between the rows and the plants, not to cover the leaves, will preserve them completely. When people complain of *all* their plants being '*cut off*,' they have, in fact, nothing to *complain* of but their own extreme carelessness. If I had a gardener who complained of *all* his plants being cut off, I should cut him off pretty quickly. If those in the thirty-six perches fail, or fail in part, fill up their places, later in the winter, by plants from the bed.

"If you find the ground dry at top during the winter, hoe it, and particularly near the plants, and root out all slugs and insects. And, when March comes, and the ground *is dry*, hoe deep and well, and earth the plants up close to the lower leaves. As soon as the plants begin to *grow*, dig the ground with a spade, clean and well, and let the spade go as near to the plants as you can without actually *displacing the plants*. Give them another digging in a month; and, if weeds come in the mean while, *hoe*, and let not one live a week. 'Oh! what a deal of *work!*' Well! but, it is for *yourself;* and, besides, it is not all to be done in a day; and we shall, by-and-by, see what it is all together.

"By the first of June you will have *turned-in* cabbages; and soon you will have early Yorks *solid*.

And, by the first of June, you may get your cow, one that is about to calve, or that has just calved, and at this time such a cow as you will want, will not, thank God, cost above five pounds.

"I shall speak of the place to keep her in, and of the manure and litter, by-and-by. At present I confine myself to her mere food. The thirty-six square perches, if the cabbages all stood till they got *solid*, would give her food for 200 days, at 80 pounds weight per day, which is more than she would eat. But, you must use some, at first, that are not solid; and, then some of them will split before you could use them. But, you will have pigs to help off with them, and to gnaw the heads of the stumps. Some of the sugar-loaves may have been planted out in the spring; and thus these thirty-six perches will get you to some time in September.

"Now, mind, in March, and again in April, sow more *early Yorks*, and get them to be fine stout plants, as you did those in the fall. Dig up the ground and manure it, and as fast as you cut cabbages, plant cabbages; and in the same manner, and with the same cultivation, as before. Your last planting will be about the middle of August, with *stout plants*, and these will serve you into the mouth of November.

"Now we have to provide from *December to May inclusive;* and that, too, out of this same piece of ground. In November there must be, arrived at perfection, 3,000 turnip plants. These, *without the greens*, must weigh, on an average, five pounds, and this, at eighty pounds a-day, will keep the cow 187 days; and there are but 182 days in these six months. The

greens will have helped out the latest cabbages to carry you through November; and, perhaps, into December. But for these six months, you must *depend* on nothing but the Swedish turnips.

"And now how are these to be had *upon the same ground that bears* the cabbages? That we are now going to see. When you plant out your cabbages in the fall, put first a row of early Yorks, and then a row of Sugar-loaves, and so on throughout the piece. Of course, as you are to use the early Yorks first, you will cut every other row; and the early Yorks that you are to plant in summer will go into the intervals. By-and-by, the sugar-loaves are cut away, and in their place will come Swedish turnips, you digging and manuring the ground as in the case of the cabbages; and, at last, you will find about sixteen perches where you will have found it too late, and *unnecessary* besides, to plant any second crop of cabbages. Here the Swedish turnips will stand in rows at two feet apart (and always a foot apart in the row); and thus you will have three thousand turnips; and if these do not weigh five pounds each on an average, the fault must be in the seed, or in the management.

"The Swedish turnips are raised in this manner:—You will bear in mind the *four perches* of ground, in which you have sowed and pricked out your cabbage plants. The plants that will be left there will, in April, serve you for *greens*, if you ever eat any, though bread and bacon are very good without greens, and rather better without than with. At any rate, the pig, which has strong powers of digestion, will consume this herbage. In a part of these few perches, you will, in March and April, as before directed, have sown and raised your

early Yorks for your summer planting. Now, in the *last week of May*, prepare a quarter of a perch of this ground, and sow it, precisely as directed for the cabbage-seed, with Swedish turnip seed, and sow a quarter of a perch *every three days*, till you have sowed *two perches*. If the *fly appears*, cover the rows in the *day time* with cabbage leaves, and take the leaves off at night; hoe well between the plants, and when they are safe from the fly, *thin* them to four inches apart in the row. The two perches will give you nearly *five thousand plants*, which is 2,000 more than you will want. From this bed you draw your plants to transplant in the ground where the cabbages have stood, as before directed. You should transplant none much before the middle of July, and not much *later* than the middle of August. In the two perches, whence you take your turnip plants, you may leave plants to come to perfection, at two feet distances each way; and this will give you, *over and above*, 840 pounds weight of turnips; for the other two square perches will be ground enough for you to sow your cabbage plants in at the end of July or 1st of August, as directed for last year.

"I should now proceed to speak of the manner of harvesting, preserving, and using the crops; of the manner of feeding the cow; of the shed for her, the managing of the manure, and several other less important things; but these, for want of room here, must be reserved for the beginning of my next Number. After, therefore, observing that the turnip plants must be transplanted in the same way that cabbage plants are; and that both ought to be transplanted in *dry* weather, and in ground just *fresh digged*, I shall

close this Number with the notice of two points which I am most anxious to impress upon the mind of every reader.

" The first is, whether these things give an *ill taste* to milk and butter. It is very certain that the taste and smell of certain sorts of cattle food will do this; but I state, upon positive and recent experience, that early York and sugar loaf cabbages will yield as sweet milk and butter *as any food that can be given to a cow*. During this last summer I have, with the exception about to be noticed, kept, from the 1st of May to 22d October, *five cows* upon the grass of *two acres and a quarter of ground, the grass* being generally *cut up for them* and given them in the stall. I had, in the spring, 5,000 cabbage plants, intended for my pigs, eleven in number. But the pigs could not eat *half* their allowance, though they were not very small when they began upon it. We were compelled to resort to the aid of the cows; and, in order to see *the effect on the milk and butter*, we did not *mix* the food, but gave the cows two *distinct spells* at the cabbages, each spell about *ten days in duration*. The cabbages were cut off the stump with little or no care about *dead leaves*; and sweeter, finer butter—butter of a finer colour, than these cabbages made, never was made in this world. I never had better from cows feeding in the sweetest pasture. Now, as to *Swedish turnips*, they do give a little taste, especially if boiling of the milk-pans be neglected, and if the greatest care be not taken about *all* the dairy tackle. Yet, we have, for months together, had the butter so fine from Swedish turnips, that nobody could well distinguish it from grass butter. But, to secure

this there must be no *sluttishness*. Churn, pans, pail, shelves, wall, floor, and all about the dairy must be clean; and, above all things, the pans must be *boiled*. However, after all, it is not here a case of delicacy of smell so refined as to faint at any thing that meets it, except the stink of perfumes. If the butter do taste a little of the Swedish turnip, it will do very well where there is plenty of that sweet sauce which early rising and bodily labours are ever sure to bring.

"The *other point* (about which I am still more anxious) is, the *seed*; for, if the seed be not *sound*, and especially if it be not *true to its kind*, all your labour *is in vain*. It is best, if you can do it, to get your seed from some friend, or some one that you know and can trust. If you save seed, observe all the precautions mentioned in my book on *gardening*. This very year I have some Swedish turnips, *so called*, about 7,000 in number, and should, if my seed had been *true*, have had about *twenty tons* weight; instead of which I have about *three!* Indeed they are *not Swedish turnips*, but a sort of mixture between that plant and *rape*. I am sure the seedsman did not wilfully deceive me. He was deceived himself. The truth is, that seedsmen are compelled to *buy* their seed of this plant. *Farmers* save it; and they but too often pay very little attention to the manner of doing it. The best way is to get a dozen of fine turnip plants, perfect in all respects, and plant them in a situation where the smell of the blossoms of nothing of the cabbage, or rape, or turnip, or even *charlock* kind can reach them. The seed will keep perfectly good for *four years*.

"I have now, in the conclusion of this article, to

speak of the manner of *harvesting* and *preserving* the *Swedes;* of the *place to keep the cow in;* of the *manure* for the land; and of the *quantity of labour*, that the cultivation of the land and the harvesting of the crop will require.

"*Harvesting and preserving the Swedes.*—When they are ready to take up, the tops must be cut off, if not cut off before, and also the *roots*; but neither tops nor roots should be cut off *very close*. You will have room for ten bushels of the *bulbs* in the house, or shed. Put the rest into ten-bushel heaps. Make the heap *upon* the ground, in a *round form*, and let it rise up to a point. Lay over it a little litter, straw or dead grass, about three inches thick; and then earth upon that about six inches thick. Then cut a thin round *green turf* about eighteen inches over, and put it upon the crown of the heap to prevent the earth from being washed off. Thus these heaps will remain till wanted for use. When given to the cow, it will be best to *wash* the Swedes, and cut each into two or three pieces with a spade or some other tool. You can take in ten bushels at a time. If you find them *sprouting* in the spring, open the remaining heaps, and expose them to the sun and wind, and cover them again slightly with straw or litter of some sort.

"*As to the place to keep the cow in*, much will depend upon *situation* and circumstances. I am always supposing that the cottage is a real *cottage*, and not a house in a town or village street; though, wherever there is a quarter of an acre of ground, the cow *may* be kept. Let me, however, suppose that which will generally happen; namely, that the cottage stands by

the side of a road, or lane, and amongst fields and woods, if not on the side of a common. To pretend to tell a country labourer how to build a shed for a cow, how to stick it up against the end of his house, or to make it an independent erection; or, to dwell on the materials, where poles, rods, wattles, rushes, furze, heath, and cooper-chips, are all to be gotten by him for nothing, or next to nothing, would be useless; because a man, who, thus situated, can be at any loss for a shed for his cow, is not only unfit to keep a cow, but unfit to keep a cat. The warmer the shed is, the better it is. The floor should *slope*, but not too much. There are *stones*, of some sort or other, every where, and about six wheel-barrow fulls will *pave* the shed, a thing to be by no means neglected. A broad trough, or box, fixed up at the head of the cow, is the thing to give her food in; and she should be fed three times a-day, at least; always at *day-light*, and at *sun-set*. It is not *absolutely necessary* that a cow ever quit her shed, except just at calving time, or when taken to the bull. In the former case the time is, nine times out of ten, known to within forty-eight hours. Any enclosed field or place, will do for her during a day or two; and, for such purpose, if there be not room at home, no man will refuse place for her in a fallow field. It will, however, be good, where there is no *common* to turn her out upon, to have her led by a string, two or three times a-week, which may be done by a child five years old, to graze, or pick, along the sides of the ditches. Where there is a *common*, she will, of course, be turned out in the day time, except in very wet or severe weather; and, in a case like this, a smaller quantity of ground will suffice

for the keeping of her. According to the present practice, a miserable '*tallet*' of bad hay is, in such cases, the winter provision for the cow. It can scarcely be called food; and the consequence is, the cow is both *dry* and *bousy* nearly half the year, instead of being dry only about fifteen days before calving, and being sleek and lusty at the end of the winter, to which a *warm lodging* greatly contributes. For, observe, if you keep a cow, any time between September and June, out in a field, or yard, to endure the chances of the weather, she will not, though she have food precisely the same in quantity and quality, yield above *two-thirds* as much as if she were lodged in a house; and in *wet* weather, she will not yield *half* so much. It is not so much the *cold* as the *wet* that is injurious to all our stock in England.

"*The manure.*—At the *beginning*, this must be provided by collections made on the road; by the results of the residence in a cottage. Let any man clean out *every place* about his dwelling; rake and scrape and sweep all into a heap; and he will find that he has a *great deal.* Earth of almost any sort that has long lain on the surface, and has been trodden on, is a species of manure. Every act that tends to neatness round a dwelling, tends to the creating of a mass of manure; and I have very seldom seen a cottage, with a plat of ground of a quarter of an acre belonging to it, round about which I could not have collected a pretty large heap of manure. Every thing, of animal or vegetable substance, that comes into a house, must *go out of it again*, in one shape or another. The very emptying of vessels, of various kinds, on a heap of common earth,

makes it a heap of the best of manure. Thus goes on the work of *reproduction*; and thus is verified the words of the Scripture: '*Flesh is grass*; and there is *nothing new under the sun.*' Thus far as to the *outset*. When you have *got the cow*, there is no more care about manure; for, and especially if you have a *pig* also, you must have enough annually *for an acre* of ground. And, let it be observed, that, after a time, it will be unnecessary, and would be injurious, to manure *for every crop*; for that would produce more stalk and green than substantial part; as it is well known, that wheat plants, standing in ground too full of manure, will yield very thick and long *straws*, but grains of little or no substance. You ought to depend more on the spade and the hoe than on the dung-heap. Nevertheless, the greatest care should be taken to preserve the manure; because you will want *straw*, unless you be by the side of a common which gives rushes, grassy furze, or fern; and to get straw you must give a part of your dung from the cow-stall and pig-stye. The best way to preserve manure, is to have a pit of sufficient dimensions close behind the cow-shed and pig-stye, for the run from these to go into, and from which all runs of *rain-water* should be kept.—Into this pit would go the emptyings of the shed and of the stye, and the produce of all sweepings and cleanings round the house; and thus a large mass of manure would soon grow together, much too large a quantity for a quarter of an acre of ground. One good load of wheat or rye straw is all that you would want for the winter, and half a one for the summer; and you would have more than enough dung to exchange against this straw.

"Now, as to *the quantity of labour* that the cultivation of the land will demand *in a year*. We will suppose the whole to have *five complete diggings*, and say nothing about the little matters of sowing and planting, and hoeing, and harvesting, all which are a mere trifle. We are supposing the owner to be *an able labouring man*; and such a man will dig twelve perches of ground in a day. Here are 200 perches to be digged, and here are a little less than seventeen days of work, at twelve hours in the day; or 200 *hours'* work, to be done in the course of the long days of spring and summer, while it is light long before *six* in the morning, and long after *six* at night. What *is it*, then! Is it not better than time spent in the ale-house, or in loitering about? Frequently, and most frequently, there will be a *boy*, if not two, big enough to help. And I (I only give this as a *hint*) I saw, on the 7th of November, a *very pretty woman*, in the village of *Hanington in Wiltshire*, *digging* a piece of ground and planting it with early cabbages, which she did as handily and as neatly as any gardener that I ever saw. The ground was *wet*, and, therefore, *to avoid treading the digged ground in that state*, she had her line extended, and put in the rows as she advanced with her digging, standing *in the trench* while she performed the act of planting, which she did with great nimbleness and precision. Nothing could be more skilful or beautifully done.

"And, what a *produce* is that of a cow! I suppose only an average of *five quarts of milk a day*. If made into butter, it will be *equal every week to two days of the man's wages*, besides the value of the skim-milk; and

this can hardly be of less value than another day's wages. What a thing, then, is this cow, if she earn half as much as the man! I am greatly under-rating her produce; but I wish to put all the advantages at the lowest."

To the instructions given by Mr. COBBETT, may be added a recommendation to have the cow carefully curried, which is necessary to the animal's health when kept in a state of confinement, and will materially increase the quantity of milk; and her food might be given to her in a small straw yard for a portion of the day, for the sake of exercise, or she might be put out upon a tether to graze for an hour or two, in good weather, if the farm afforded a suitable place. And I would also strongly recommend particular care to be taken in transplanting the turnip plants—to raise them without breaking the smallest fibre of the root, by putting the spade completely under them, so as to loosen the earth about them, and in putting them into the ground, to take the same care that the roots are placed in the natural position, and not doubled in. Without attention to these points, the crop will be injured; indeed, it is so seldom that transplanted turnips produce *in this country*, the crop Mr. Cobbett calculates upon, that I should prefer your applying half a rood, or even an entire rood, more ground to the support of your cow, and this would enable you to sow your turnips in the usual way; or, instead of them, mangel wurzel, which is a much more profitable crop, where the ground is suitable; and, if a rood and a half, or two roods, thus cultivated, with the addition of a trifling quantity of

straw, will insure an ample supply of food for a cow during the entire year, I think none of you will consider the ground misapplied, particularly as it would afford ample refuse for feeding one or two store pigs. Going, therefore, upon the supposition of allotting half an acre to this object, I would recommend the following rotation, in which the ground is supposed to be divided into eight equal parts, of ten perches each :—

	GREEN.	ROOTS.
10 Perches Swedish turnips (after winter cabbage) at 25 tons per acre.....		Lbs.3,500
10 Perches yellow Aberdeen turnip, at 40 tons per acre..		5,600
Rape before sowing do. 15 tons per acre.....	Lbs.2,100	
10 Perches yellow bullock, or white globe, 40 tons per acre.....		5,600
Winter vetches, at 15 tons per acre.....	2,100	
10 Perches Malta do. at 30 tons per acre		4,200
Early Emperor cabbage before, 144 per perch, at 3lb.....	4,320	
10 Perches early Emperor and winter cabbage, in alternate drills, 144 per perch, at 4 and 8lbs., followed by Swedish turnips.....	8,640	
	Lbs.17,160	Lbs.18,900

	GREEN.	ROOTS.
Carried Forward.. Lbs.	17,160	Lbs. 18,900
10 Perches Spring vetch, after white globe, at 15 tons per acre	2,100	
Followed by rape.		
10 Perches do. do. after Malta turnip.....	2,100	
Followed by winter vetch		
10 Perches sugar loaf cabbage, 144 per perch, at 5lb....	7,200	
Followed by early cabbage.		
	Lbs. 28,560	Lbs. 18,900
From 1st April, when rape comes in, to 1st November, when turnips are ripe, there are 214 days, at 100 per day..	20,400	
From 1st November, to 1st April, 151 days, at 80lbs.....		12,000
Overplus remaining,.. Lbs.	7,160	Lbs. 6,820

The supply of turnips being so great, will prevent every danger from a light crop of rape or winter vetches in spring, and will increase the redundancy of green food to be applied for rearing pigs, the profit on which will more than supply what hay, straw, and seeds might be required; and, as the ground will be getting more rich every year, the produce may be expected very considerably to increase. It appears to me, therefore, quite undeniable that the thing can be done, and if so,

and upon a plan which requires no particular trouble or skill in the management, how shameful is it for you often to let two, or perhaps three acres of land be wasted in the summer months to graze *one* animal, and to have her starving all winter upon bad hay or fusty straw.

Mr. Cobbett's plan of keeping a cow is particularly well adapted to the poor cotter, having merely a house and small patch of ground, and paying the rent of his holding by his daily labour, and who, after his day's work, can, in a few minutes, every evening, put out the new plants as directed; and all such people will be well rewarded for their industry, by the quantity of milk, and the large addition of manure which they will obtain; for, if it should so happen that the cotter was so poor as not to have even straw to bed his cow with, if he is attentive to gather the weeds growing on the road side, or in the fields adjoining, and use them as a substitute, he will find sufficient to increase the quantity of manure to such an extent, that he will have no difficulty in getting, from his less industrious neighbours, ground to put it out upon, and thus get a crop of potatoes, amply sufficient to support his family, upon very moderate terms—the quantity of manure thus obtained from a cow, well fed and kept constantly in the house, being greater than what any one who has not made the experiment will believe; but if the cotter, instead of enriching the land of his neighbours, should have even a field or two of his own, the constant supply of manure would so improve the quality of the soil, that it would yield twice as much as in the way now usually practised; and, having only a small rent to pay, he would soon become able to buy an acre or two more, and thus

gradually advance himself to the rank of those small farmers to whom I am now addressing myself, and would very shortly be possessed of that quantity of manure which would enable him to enter upon a *proper rotation of crops;* without attention to which, no farmer, great or small, can get the full return from his land which it is capable of affording. *(See in Appendix, the rotation for* TWO *acres, which is so contrived that each crop in the rotation* follows the order of the divisions.)*

To make you sensible of this, I should wish you, for sake of example, to suppose a small farmer, holding eight acres of land, having acquired a stock of manure sufficient for one-fourth part, or two acres. He is then able to commence the following rotation:—These two acres are, the first year, planted with green crops, in which are included potatoes, turnips, cabbages, mangel wurzel, &c. according to the nature of the soil and other circumstances. The next year, he manures two acres more; and does the same the third year; and, in the fourth year, the whole farm has been gone over; and after each manuring, the two acres so manured are occupied with the following succession of crops: first year, green crops, as already stated; second year, oats, barley, flax, or wheat, with clover; third year, the clover to be cut and brought to the cattle, making into hay whatever may be to spare; fourth year, oats, wheat, or barley. The fifth year, the same rotation commences again, and the one fourth part is again placed in green crops and well manured, and the other

* The word rotation is used to express a certain succession of particular crops for a certain number of years; which period being completed, the same succession is again commenced as at first.

crops succeed as before. By this means, it is evident the farmer gets *four* productive crops from the one manuring, and has always *one-half* of the entire farm, viz. *four acres*, in grain; one fourth, or two acres, in clover; and one fourth, or two acres, in potatoes, turnips, &c., which is much more than any farm yields according to the present system.

In order to make this rotation more simple, and less likely to confuse you, I have desired *all* the manured land to be laid down with clover, along with the first grain crop; but it is open to the farmer to sow only *half* in clover, and put the other half in vetches or cabbages, if he should wish to have greater variety of food for his cattle, which is always desirable. The only thing insisted upon is, that two crops of grain are not sowed in succession upon the same ground. It is also to be observed, that the plentiness of manure obtained by this system of house feeding, will enable you to manure the stubble of the last grain crop, and sow rape, which will yield a full return and be off the ground in time for your potatoes and turnips, which, upon the foregoing plan, always succeed the second grain crop; or if a crop of flax* is made last in the rotation, in place of the second crop of grain, the rape can be put in after it to greater advantage, as flax is earlier ripe; for if rape is sowed the first week in August, on well manured ground, it will give a good cutting at November, and another the following April; and the quantity of food

* Sowing flaxseed upon clover ley has been frequently tried, and an excellent crop is produced: but it is said to be stronger and coarser than in the usual mode of cultivation. However, this might, I think, be remedied, by sowing it thicker, which would tend to make it finer, and the advantage of having a good crop of rape after it, would fully justify making the experiment.

for your cattle may be still further increased by planting, with your potatoes, curled kale on the north edge of the ridges, in such manner as that the mid-day shadow may fall in the trench, and, planted three feet assunder, a material addition to the autumn and winter feeding will be obtained without injury to the potatoe crop; and I have seen them left standing in the furrows even after wheat had been sown and yielding abundantly. But if this should be objected to, they may be cut down and transplanted into any corner of the farm, to go to seed, which will sell for double the money, perhaps, which any other equal portion of the farm will produce. I wish it, however, to be particularly understood, that I recommend the foregoing rotation merely as a great improvement upon the present practice, and likely to be very generally attended with succes, but not as the best for *every* soil; for I am perfectly sensible the varieties of soil and the varieties of circumstances are so numerous, that there is no possibility of laying down any plan to suit all cases; and I have, therefore, thought it better to obtain the assistance of an experienced farmer, who will call upon you for the purpose of personally inspecting your farms, and giving instructions suitable to the nature and condition of each, not only as to the rotation of crops, but also as to the mode of preparing the ground and putting them in; which accurate information, I am of opinion, nothing but personal inspection can supply. But there are, nevertheless, certain fixed principles which every farmer is bound to attend to, and which never should be lost sight of, and these I shall shortly enumerate; but first, I should wish to say a few words as to the preservation

of health, without which, the small farmer and cotter are entirely incapacitated from taking advantage of these or any other instructions to better their situation.

In this respect I would recommend to you, most earnestly, that all stagnant water, filth, and putrid substances should be immediately removed from the front of your houses, in order that the door, which is often the only mode of ventilation, may admit pure air. If the floor within is lower than the land without, let a trench be cut all round, to carry off the moisture, and make the house as dry as the nature of things will admit. Let the windows be made to open, so that every part of the house may be thoroughly ventilated; and let the inside and outside, but particularly the inside, be white-washed as often as can be conveniently done, and let the most minute attention be paid to cleanliness.—With these precautions, the health of a labouring man may gennerally be calculated on, except in cases of fever or other infectious complaints, and even against these the foregoing recommendations will be a great protection, *if strictly attended to;* but, should any member of the family be attacked by any complaint of an infectious nature, there is little chance of preventing its being communicated to every one in the house, *if they are neglected.* The fresh air must be freely admitted; the walls white-washed, and every thing in the house, of furniture, bedding, and clothes, washed and put out and exposed to the sun and air, and hot lime put on the floor, if there is any damp, to dry it up.—When a person is ill of an infectious complaint, the whole air around him is infected, and it is only by admitting the pure air from without, to dilute it, if I may

use the expression, that the infection can be so weakened as to prevent bad consequences to those who are obliged to breathe it. From not attending to this, many complaints, which, at the beginning, were not infectious, become so afterwards, and whole families are carried off, or put past labour, from neglecting precautions which might have been so easily taken. It is observed, that infectious diseases seldom spread in the houses of the upper ranks of society, and it is merely owing to the admission of fresh air, and the cleanlines which is observed: and the same will account for the safety of physicians and attendants in hospitals, where there are hundreds of patients collected; whereas, if fever once gets admittance in a poor man's cabin, the infection is preserved by the moist and putrid matter without, and the damp and dirt within, and is rendered more and more malignant by the want of a circulation of air, until, in general, it attacks the whole family, and, if it does not destroy their lives, it so weakens their strength, and, by repeated relapses, continues to hang over them so long, as eventually to reduce them to poverty and wretchedness; all which, in most cases, would probably have been prevented by a particular attention to what has been here recommended.

But cleanliness and ventilation, however valuable they may be as the means of preventing or banishing disease, cannot be as effectual as they ought to be whilst the use of ardent spirits prevails in the degree it now does.

I need not take up your time in expatiating upon the consequences attending this ruinous practice those

who are even most addicted to it are fully sensible of its injurious tendency, but think it is in vain to struggle against it. Nothing, however, can be more contrary to facts and experience than such a belief. It is only a few years since some benevolent people in America first started the idea of forming what are called *Temperance Societies.* The hopelessness of such an undertaking was so much the belief of the public, that the attempt was ridiculed as absurd and visionary, but it has, nevertheless, proved quite the reverse. Thousands have been thereby reclaimed, and are now enjoying a degree of comfort and happiness before unknown to them. Even among sailors, (a class of people least likely to be operated upon,) members are now enrolled, and *temperance* ships are manned from New York, without difficulty, for the longest voyages. From America the plan has extended to Scotland, and *temperance* ships are now, in like manner, sailing from Glasgow, and numerous societies are spread over the face of the country. From Scotland, the plan seems to have crossed over to the North of Ireland, and societies are already in existence in this very county; therefore, with such numerous examples of successful resolution before you, both abroad and at home, I most earnestly beg of you to make the attempt, and trust you will not show less firmness than so many others have proved themselves to possess. Subjoined, you will find what a list of desirable articles of clothing may be bought with the money which it would cost you to indulge in a single glass of spirits daily. When you read it over, think of the short-lived, selfish gratification you derive from the practice, and think of the *permanent*

comforts of which you deprive yourselves, your wives and your children thereby, and at once, determine to abandon the use of spirits for ever; and, take my word, you will soon find the benefit of it, both in your health and circumstances.

One Glass of Whiskey per Day, commonly called by Drinking Men "*their morning*," costs (at Three Halfpence per Glass) no less a Sum than Two Pounds, Five Shillings and Sevenpence Halfpenny, *yearly!* which sum, if laid by, would provide the following comforts and necessaries of life for a family, viz.:—

One Pair of Large Blankets....	£0	10	0
One Pair of Sheets.....	0	6	0
Two Pair of Shoes.....	0	12	0
Two Shirts.....	0	4	0
Two Neck Handkerchiefs.....	0	1	1
Two Pair of Stockings.....	0	2	8
One Hat.....	0	5	0
Cloth for Trowsers, and Making..	0	4	6
Change remaining.....	0	0	4½
	£2	5	7½

Having said thus much upon this subject, of such first rate importance to the labouring classes, I proceed to give a list of those maxims in farming, which are of universal application, as far as I have been able to collect them:—

1st. The ground must be thoroughly drained.—For this purpose it is not sufficient to cut drains in the low grounds; but the springs must be sought for as high

up as any symptons of them can be discovered, and the water conveyed from them, and not allowed *to force its way through the soil;* in which case it will destroy the effect of any manure which may have been applied. In proof of which, you may always observe, in such situations, the grain in that part of the field ten or fourteen days later than the rest of the crop, and in very late seasons it may, perhaps, not ripen at all.

2dly. The weeds must be destroyed; which in a little time will be accomplished by proper attention in collecting, as far as possible, all weeds, *before* putting in the crop, and by sowing the green crops in drills,* and carefully weeding them afterwards; and they may even be made worth the expense of gathering, as they will yield a valuable addition to the manure heap, if applied as bedding in the cow-house. For this purpose, they should be collected before flowering. It is shameful to see, in many fields, the quantities of rag-weed ripening to seed, and impoverishing the ground as much as a crop, which might, if usefully applied, as above directed, have brought nourishment to the soil in place of exhausting it.

3dly. All cattle must be fed in the house or straw yard, upon good food; such as rape, cabbage, turnips, mangel wurzel, potatoes, clover, and vetches, in proper succession, will abundantly supply, according to the nature of the land; there being no farm in which some

* I have already mentioned the practicability of getting an early supply of the leaves of curled kale in autumn, by planting them with the potatoes in the edge of the ridges, and I should think that to be the best plan for such a purpose: but to plant the potatoes in drills is a much more effectual way of cleaning the land, and is, therefore, much to be preferred on that account: and curled kale for winter use may be cultivated in this way, by planting them at the edge of the broad ridges, as hereafter recommended.

of these crops may not be raised in abundance, with the aid of manure, which the practice of home feeding produces.

4thly. Never take two crops of the same kind in succession off the same land, although this is sometimes done with potatoes, to reclaim land that has never been in cultivation; but in other cases this is not advisable; and, in particular, two grain crops cannot be taken in succession without injuring the soil, and in the end a manifest *loss* arises from the practice, in place of that *advantage* which the needy farmer looks for; because, by interposing a *green* crop, such as clover, &c., full as many *grain* crops may be had off the same piece of land and from the same manure, in any given number of years, by taking them in *rotation*, as by taking them in *succession*. But the rotation system has this advantage, that while you get as many grain crops, you keep the land always in good heart, and between the crops of *grain* you get *green* crops equally valuable. This is accounted for by considering that no two crops derive the same particular nourishment from the land. The roots of some sink deep, and draw their nourishment from the bottom, while others spread on the surface; and it is generally believed that plants derive their food and support from as different ingredients in the earth, as the different kinds of cattle derive their food upon the surface. Horses will eat grass which cows reject, and so with every description of cattle; and supposing the analogy to hold good in plants, it is easy to conceive that a change of crop may find the soil abundant, in that kind of nourishment which it requires, although it might be, at the time, exhausted of that kind required

by the crop which had gone before; and thus the ground may be as much restored by the introduction of a *green* crop after a *grain* crop, as if the field had actually lain fallow, and experience, in a great degree, justifies this reasoning.

I am fully sensible, however, that a system of over cropping with grain will extract *every kind* of nourishment from the soil, and leave it so that *it will not even yield grass.* This is the case with the land which is left to *rest*, as it is called by those who take three or four grain crops in succession; and the phrase is well applied, for the land is really not fit *to do any thing.* The error of this class of persons is, that they turn the land to grass at the *end*, in place of the *beginning* of their course. Had *grass-seed* been sown with the *first crop of grain*, there would have been a good crop of hay, and good after-grass, and the second crop of grain would have been as good as the first; and this is what ought to be done by those whose land is not suited to clover, or who, from poverty, are not able to buy the clover-seed; and even where *two* grain crops have been taken, it would be better to sow it with rye-grass, which will yield a crop on very poor land, rather than leave the ground to be possessed by weeds and such herbage as may naturally rise. The fact is, the last exhausting crop should only be put in upon that portion of the farm which is intended for potatoes, and other green crops, the succeeding *year*, which crops then give the manure to restore it to a productive state, and by this means there is no land at all lost by what is called *resting* it.

5thly. The place for the manure should be contriv-

ed so, that it should not be exposed to any accumulation of rain water, but should receive the contributions from the sewers of the house, stable, cow-house, &c. &c. The bottom should be paved, so that the drainage of the manure should run into a small cask or well adjoining it. Fresh *earth* should be regularly brought and spread over the manure, and the liquid in the well should be thrown *over it*; by which means the whole compost would be equally rich, and the quantity increased to any extent that could be required; and the steam or smoke which arises from the stable manure, and which is the very richest part of it, would be kept under and imbibed by the earth so laid on, and the quantity of the earth should be proportioned to the strength of the dung with which it is mixed. While speaking of manure, it may not be amiss to remak the great loss arising from the practice of letting off the water in which flax has been steeped, which, if sprinkled over clover, or made into compost with fresh earth, would be found most valuable.*

6thly. It should be the object of the farmer, as soon as he possibly can, to have his fences made in straight lines, and of as great length as the farm will conveniently admit of. It is almost inconceivable the quantity of time lost by the frequent turning of the plough, and the quantity of land thrown out of cultivation, by having a crooked irregular fence, the bendings of which the plough cannot follow.

* At the time the flax is taken out of steep, all the rivulets in the country are strongly impregnated with the contents of the flax holes, and those through whose lands such rivulets pass, would do well to turn the stream, where it can be done, over their after-grass, or use it in watering their cabbages, turnips, &c. the advantages of which would soon be perceivable. The richness of flax water is fully shown by the growth and colour of the grass where flax has been spread to dry.

7thly. A farmer who has any understanding must perceive, the moment it is mentioned, that every unnecessary ditch is so much land actually lost, and that his care ought to be to have as few of them as possible; and it will, therefore, occur to him, that, if he feeds his cattle in the house, almost all his ditches may be dispensed with, except the mearing ditches, which are necessary to keep out those of other people; but he has evidently no occasion to prepare a fence against his own, for he keeps them at home, and this circumstance would enable him to raise hedge-rows, which never can be done if the cattle are turned out, the value of which, for shelter to his crops and supplying him with timber for all country purposes, is most important. The loss of land incurred from this cause is greater than any one would suppose who has not considered it; and I would almost venture to say, there are farms in this country of twelve acres, in which the ground lost between the trench, or gripe, and the backs of the ditches, together with that lost by the crookedness of the line, would amount fully to one acre, or one-twelfth part of the whole. Now, supposing a farmer to pay 30s. an acre for his land, he, of course, loses 30s. annually by this waste of the surface, which is equal to 2s. 6d. an acre upon his entire farm. It is quite evident, therefore, that these ditches should be piped and levelled in, which would have the additional advantage of relieving the crops from the vermin to which those ditches afford a shelter.

8thly. It requires a farm of fully 50 acres to give sufficient employment to a pair of horses; perhaps 60 would be nearer the truth; and, therefore, if a farmer

even ploughs in partnership, he ought to have 25 or 30 acres. I here speak of those who have no other employment for their horses than what the cultivation of the farm affords. There are, however, cases where the distance of fuel, and distance of lime, may make a horse necessary when it might not be otherwise. All *small* farmers ought to use the spade, for many reasons. It costs but little more, even if he has to hire assistance, and does the business better, and the crop is better. In all drill crops, also, by using the spade, he may put in a quicker succession of crops, and have one coming forward as the other is ripening. In wet seasons, he can dig when he cannot plough; and its value, in turning up stiff clay lands in autumn, and exposing the soil to the frost and snow, is scarcely to be imagined; and in all such lands *this plan* should be pursued where no winter crop is put in.

9thly. In all wet lands, and where the clay is retentive, the ridges should be narrow, which may, indeed, be almost laid down as a general rule, in a climate so moist as this; but where the land is sufficiently dry, the broad ridge is preferable.

10thly. No straw whatever should be sold off the farm. In England this is strictly forbidden by lease, and the tenant who did so would be supposed to have an intention of running away. If the cattle are home-fed, as here recommended, all the straw the farm can be made to produce will prove little enough; and for this reason, as soon as the farmer is in circumstances to enable him to do so, it would be his interest to slate his house and out buildings, which, in the end would be found the cheapest roof, and would preserve, for the use

of the farm, the large quantity of straw which is annually consumed in repairing the thatch.

Having laid down these general maxims, the propriety of which I think you cannot but admit, I should wish to lay before you some observations which have occurred to me in visiting your farms: And first, as to your potatoe crop—your present mode of cultivation is either in ridges or drills; the advantage of the former is said to be, that the potatoes are of better quality, but it is admitted, the produce is not so plentiful—that it requires a great deal more manure—that the weeds cannot be so well eradicated, nor the ground so well fallowed as it is by the latter—and also, that in dry seasons, any partial fall of rain runs off without reaching to the roots of the plants;—on the other hand, in the drill way, the potatoes, generally speaking, are more plentiful, but they are not usually so dry, and in rainy seasons they are more liable to be injured by superabundant moisture—now, a mixed system of cultivation appears to me likely to unite the advantages of *both*, and to be free from the disadvantages of *either*; and I recommend, for this purpose, that you should throw your land into broad ridges, of 12 to 14 feet, and then plant your potatoes in regular drills across them, slanting the course of the drill according to the lay of the land, so as just to give sufficient fall to the furrow to carry off any moisture that might be injurious, and at same time retain as much as might be useful. It is evident that, in this way, in wet weather, the trench will prevent any water from lodging, and that in dry seasons, the furrow receives the slightest shower, and conveys the moisture direct to the roots of the plants. The drill also, in this

way, admits the use of the hoe and the scuffle by a person standing to the trench, which cleans the ground with less trouble, and much better than it can be done by hand weeding. You are also enabled to mould up higher, which is a great object when those kinds are cultivated in which the increase grows up the stalk, as, in such cases, the higher you mould, the greater produce you have, and in digging out (as you know where to put the *spade*) there will not be seen so many potatoes cut—but in any case, a *four-pronged grape* is much preferable to the spade for this work. It appears to me, by following this plan, you would both gain in produce and save in manure, and your land would get better tillage and be left in a cleaner state, and when the farmer has the command of a plough, there is nothing to prevent its being used in the preparation of the ground, marking out the place for the trench by a furrow. In regard to the cultivation of this crop, I should also wish to recommend to you the practice of putting your manure into the ground, as opportunity offers, through the course of the winter, as soon as it is made, and leave for spring only, the work of dropping in the seed at the back of the spade, which any boy or girl can do, by which means you will have the potatoe setting over before, I may say, you are now in the habit of beginning to it. By following this practice, there will be a prodigious saving of manure, as you may readily prove, by making the experiment of putting out twenty loads, or any other particular quantity of manure, and measure the ground it sufficiently covers, then put a similar quantity by itself, in a heap, and let it remain until the May following, and measure how far it will go. I will

venture to say, it will not manure half the space, and the land manured at November will be found to give the best and *earliest* crop. In order that the potatoes shall be of good quality, it is very material that they should be fully ripe before the frost; to accomplish which, the planting ought to take place in the month of April. When the frost comes on while the crop is in a growing state, the plants are killed before they arrive at maturity, and are consequently wet and without nourishment. It is a great mistake to suppose, because potatoes planted late in May often give a more abundant produce, that the crop is, therefore, the most profitable. Many people say they will do well enough for feeding pigs and cattle, but a good dry potatoe is just as superior to a wet one, as food for your pig, as it is for yourselves, and if you put wet and dry into a basket together, the animal will soon show you that he knows the difference. Before quitting the subject of drill potatoes, it may not be unadvisable to notice the general prejudice that prevails against stirring the ground between the drills in dry weather, in summer, which, it is said, lets the heat more easily penetrate into the earth; now, the very reverse of this is the case, the oftener the ground is stirred, the less it will be affected by the heat. Land, in a pulverised state, imbibes the dew and damp of the night, the exhalation of which, by the warmth of the following day, produces a moisture round the plants, which nourishes and invigorates them in a most remarkable degree; whereas, if left unmoved, it often, particularly in clay land, gets baked so hard, that no plant can thrive in it. Let the experiment be made in a plot of cabbages, and dig

carefully between the rows at one side, and compare them with the others which are left untouched, and you will soon see the difference; in fact, if you will take the trouble to observe a drill of cabbages when the earth is first turned up after long parching weather, you will perceive, before it has been done two hours, that the leaves have appeared a more lively colour, and will look more vigorous than they did before, and you may rest assured that, in dry weather, every drill crop is improved by having the soil turned up as often as practicable, provided you do not disturb the roots of the plants.

The next thing I wish to remark upon, is your mode of proceeding in the cultivation of wheat. The customary mode is either to put in the crop directly after potatoes, or first to take a crop of flax, and after it, sow the wheat, adding some lime harrowed in with the seed; or a third way is, to fallow the ground intended for it, which however is but rarely practised; but, in any case, you almost invariably trench up the land in ridges, with such sharp edges, that you cannot without very particular care, *apply the harrow in spring*. This practice, though almost unknown to you, is of infinite service to any winter crop, by breaking the crust formed on the ground by the heavy rains, and opens the surface to the influence of the atmosphere, at the same time earthing up the plants, which being rolled in the course of a few days, will afterwards grow with double vigour. This mode of trenching with such sharp edges, is by no means necessary. Even in the wettest lands, it may be so done as to leave the ridge in such a shape as will protect the edges of the ridges from being too severely acted on by

the harrow, and the advantage to be gained by this operation is not confined merely to the wheat crop, but you are enabled thereby to sow, at same time, clover and grass-seed. From not knowing how to do which you are at present driven to the necessity, most commonly, of putting in a crop of oats after the wheat, and so take two grain crops in succession, which is contrary to the 4th rule laid down, your land thus becomes exhausted, and as you have not (according to your present mode of feeding your cattle) manure to potatoe the whole of it again, there is no alternative left you but to let it out to rest (as you term it) in which state it remains worth little or nothing, perhaps, for several years, before you can get manure to spare to bring it again into cultivation; whereas, if it had been sowed with clover and grass-seed, the practice of house-feeding, which this would enable you to have adopted, would always supply you, as I have elsewhere observed, with plenty of manure, and you would have had the second grain crop, after the clover, much superior to what it would have been after the wheat.

Those who, from not paying attention to these considerations, have not put in clover with their wheat,

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[*Note relating to the cultivation of drill crops, omitted in last page, by mistake.*]

† Every farmer knows that sandy or gravelly soil resists the effects of dry and parching weather better than clay land, and why is it so because the nature of the soil is such as to preserve it always in a loose and open state—does not, therefore, Nature point out that, to enable clay land to resist the heat in like manner, it ought to be kept in a loose and open state also, which can only be done by ploughing or trenching the ground before the frost, and continually turning it when the heat of the weather would otherwise be likely to bake it into a flag. With this mode of cultivation, clay land would produce, in a dry season one half more potatoes; and WITHOUT it, there is little chance of any crop of turnips at all in such lands.

should, nevertheless, upon no account, put in oats; let them sow a crop of vetches or field beans, which will leave the ground in a fine state for either oats or barley, and then it ought to return to potatoes or turnips, and undergo a new course of cropping.* Under this second mode of cultivating wheat, you manure both for it and for your potatoe crop, and these two manurings give you first potatoes, then flax, then wheat, then vetches or beans, and lastly, grain—that is, you get *five* crops from *two* manurings; but in the rotation I have suggested, the *one* manuring gives you potatoes, grain, clover, and grain again—that is *four* crops from *one* manure, which is evidently a better return than the other. I recommend it also more particularly on this account, as it keeps one fourth of the land always in clover, by which means, due provision is made for the accumulation of house-manure; for it cannot be too often urged upon your attention, that lime must not be applied, year after year, to the same land. Many of you think, from witnessing its first effects, that you can always have recourse to it with the same success; but in this you will most assuredly be disappointed, and if persisted in, will bring your ground into such a state that it will produce nothing—once in six or seven years is sufficient to apply it with advantage, but it never will produce the same effect as at first.

It is, therefore, of the utmost importance, that when you first begin to *lime*, you should raise your potatoes upon *it*, and make use of the house-manure, which this leaves at your disposal, to raise turnips or mangel wur-

* A French chymist has lately found, by experiment, that there is a kind of excrementitious discharge, from the roots of the bean that is congenial to the nourishment of grain, which is fully borne out in practice.

zel, for house-feeding, and increase your stock of cattle to the utmost which this plan will enable you to keep; setting it down for certain, that you ought to have, at least, one cow for every three acres of arable land, as being the *smallest* stock which will enable you to keep your land in heart, when the resource of lime can no longer be looked to; if this is not kep tin view, from the very outset, you will find you cannot manure the one-fourth of your farm every year, and you will, therefore, be thrown out of the rotation—the land will be exhausted and left out to rest, as formerly, and as it gets poor you will get poor yourselves, and having no longer the relief of lime to fall back upon, your case will become worse than what it is at present; for *now*, by lending you lime, I have no doubt of making you comfortable and independent, if you are only industrious and willing to follow the instructions given you; but *then*, this resource is lost to you, and I do not see what other can be made available for your restoration. From this digression I return to the *third* mode in use of cultivating the wheat crop, which is sowing it after a fallow—the nature and object of which operation you seem to me, in general, but imperfectly to understand. It would appear, from the practice of many, that they considered the great object of so many ploughings was merely to pulverise the ground, and if you accomplished that, by giving three or four ploughings in quick succession, nothing more was to be desired, without taking into account that the principle of this operation is built upon this circumstance—that in the course of a certain number of years' cultivation, almost all lands will accumulate a certain stock of the seeds of a variety of

weeds, which being shed upon the surface, have, from time to time, been turned down by the plough, out of the reach of vegetation, where they will be preserved for almost any length of time, until they are again brought within the influence of the atmosphere, which will immediately cause them to grow. The great object, therefore, of the fallow is, by repeated ploughings, to bring, in succession, every particle of the soil into contact with the air, and by allowing each crop of weeds to vegetate, and then ploughing them down, and bringing up another portion to be served in the same way, completely to free the land from the seeds so accumulated, which can in no other way be effectually done, as they must be allowed to grow before they can be destroyed. It is manifest, therefore, that time must be allowed between the ploughings, to let the weeds spring up, and if this time is not allowed, the seeds are again turned down, until a succeeding ploughing may restore them to light and life; this, therefore, should never be lost sight of. The plan, however, of raising wheat after fallow, is not very suitable to a small farmer, who can seldom bear to lose a year of his land; but it may be adopted in the outset, with advantage, for the purpose of cleaning his ground, and enabling him to get into a better system; and, it must be admitted, that the crop of wheat, after fallow, is very superior, both in quantity and quality, to any other, and will sell, perhaps, a shilling per cwt. higher than the produce of the same seed sowed on potatoe land. Before turning to any other subject, I wish to make one further observation upon the wheat crop—which is, that you, I may say, almost universally, let it stand until it is

over-ripe, which thickens the skin, and spoils both the appearance and quality of the grain. The rule laid down in Scotland, to know when wheat is fit to be cut down, is to take a few grains and squeeze them between your finger and thumb, and if there is no milky fluid proceeding from them, the crop ought to be cut, no matter what the appearance of the straw may be *

Another observation I have made, in going through your farms, is the very little care taken to prevent the spreading of the destructive weed called *colt's-foot*—this is the first plant that comes into flower, in spring; you will see the blossom, in the land where it grows, in the month of March, before a leaf is visible, and, in the course of a month or six weeks, whilst the ground is still red, it appears with a white tuft of down; on examining which, you will find a seed attached to each particle, by which it is carried for miles over the country, at that season, when the ground is ready prepared for its reception. It is by the sowing of the seed in this way, that this weed is propagated, for it makes but slow progress by the root, however difficult it may be to eradicate it when it has once got hold of the ground. This weed also appears to me to grow spontaneously, where the practice of over-liming, or burning the surface to make ashes, prevails.

There is another weed which I likewise see doing a great deal of mischief—I mean *rag-weed*—The quantity of nourishment it draws from the ground is shown

* It may not be amiss here to remark, that where any smut may appear in the wheat crop, the grain should be separated from the straw by LASHING it, as it is termed, which is striking the heads against a sharp board or rail—by this means the dust flies off, without being mixed up with the grain, which the operation of thrashing is sure to do—the difference in the appearance of the produce, under the two modes of management, will not be less than one to two shillings per cwt. according to the degree in which the crop has been affected.

by this, that it will not grow upon bad land. In regard to it, a most ridiculous notion prevails, which I have frequently found people possessed of, who ought to know better—namely, that all the nourishment it has extracted from the soil in its growth, is again returned to it in its decay, or in other words, that after ripening the seed, the sap descends and enriches the earth, which is, therefore, left nothing the worse; such an absurd idea can only be equalled by the notion that "draining land lets all the fat run away," as I was once told, by a person who had, nevertheless, no mean opinion of his own skill, as a farmer. I see, also, the cutting down thistles wholly unattended to, and the seed allowed to scatter with the most perfect indifference. In England, a farmer has been known to bring an action against his neighbour, for not cutting down the thistles on his farm, and he recovered damages without difficulty. I wish, most sincerely, that here, where people seem to be as litigious as in any part of the world, some one would set an example of punishing such wanton neglect as takes place with regard to all the weeds I have alluded to. Thistles are only biennial plants, and therefore, if cut down for two successive years, the supply of seed would be destroyed. I see people employed for whole days pulling up these out of their crops, when half an hour's labour, in cutting down the parent stocks, would have prevented the young growth from ever having come into existence.

There is another matter in which I have observed great ignorance and inattention shown—that is in your allowing the chaff of your corn crops to be lost. You will say, perhaps, there can be no nourishment in

chaff, and why should we trouble ourselves in th t case about it; and it is very true there can be very little actual nourishment in chaff, but there is a great deal of use in it, notwithstanding, which you may soon perceive, if you will consider that when your cow is confined to dry hay or straw, in winter, after the juicy rich grass of summer, the change of food immediately affects her habit of body—the dung gets dry—the coat stares, and from the costive state of the bowels, without any suspicion on your part, diseases originate which often end in the death of the animal, and may, perhaps, tend thereby to your own entire ruin. Now, the chaff which you throw away, is the very best remedy against this evil, and when well boiled with some potatoes mashed down, and some seeds or bran, mixed, to make it palatable, a bushel full given in this way, night and morning, will open the bowels, make the skin look healthy, and increase the quantity of milk beyond your most sanguine expectations. When chaff cannot be had, chopped hay or straw may be substituted, a machine for cutting which may be bought for about thirty shillings. The mixture should be made of such a consistence as to be easily stirred about with the hand—a greater quantity of potatoes may be given, with advantage, in this way, than in any other, but they must be boiled separate, as pototoe water is always injurious; the mixture is improved by some Swedish turnips, which may be boiled with the chaff; but where turnips are given in quantity, they will, of themselves, open the bowels sufficiently. *

* Another useful article which I see going to waste, is the seed of your flax. If you were to stook up your flax like any other crop, and delay watering it until spring, you might save the seed without

Were I to allude to every subject which might appear worthy of observation, the length of this address would greatly exceed that to which I propose to confine myself, but I cannot help further remarking, that farmers in this country are apt to judge erroneously in regard to the value of such crops as turnips and mangel wurzel, and other food for cattle, upon this principle, that they are not saleable in the market, and they give an undue preference to potatoes, on account of the money which they can almost in every season command for them. I am far from wishing to detract from the value of potatoes, and the great advantage which arises from their being adapted to the food of both man and beast; but this very circumstance generally occasions their being *sold*, and thus the farm is robbed of the manure, and the future produce curtailed, for the temporary object of raising perhaps, a trifling sum of money, though the farmer might, in the end, have even made more by *fattening* stock with them, (in which respect many prefer them to any other crop,) and have had, in this way, the manure besides. But, if a farmer has plenty of turnips and mangel wurzel, he is not tempted to misapply them, and they are, therefore, turned to the purpose for which they were intended, and if he has more than is required for that purpose—he buys cattle lean, and sells them fat—or he purchases them in good condition, at November, when beef is cheap, and holds them over for a market

the slightest difficulty. It is said, however, that the flax will not be so fine and silky in this way, but with a little trouble it may be saved, without that delay, by following the plan pointed out to you some years ago by the Linen Board; but if you do not choose to take that trouble, let the seed be, at any rate, taken off and made use of as is practised in Scotland, for the rearing of calves. The seed, when boiled, forms a rich and nourishing drink, upon which, mixed with a little skim-milk, calves will thrive as well as upon any food whatever.

in spring, when it is dear—or he buys springers in March or April, at a low price, when fodder is scarce, and sells them at May, when they are near their calving, and grass is plenty. In all cases he is sure of a good profit, in money, besides what he makes by manure, which is always most valuable; and both these crops have the advantage of being used raw; whereas, potatoes ought, when given to cattle, to be half-boiled, which consumes a great deal of fuel, if used on any great scale. It is a disputed point whether turnips or potatoes are the most beneficial crop, and great difference of opinion exists among persons holding large clay land farms, where carting off the turnips poaches the ground; and also among those who make a trade of fattening cattle upon a large scale, who have, in several instances, preferred the latter; but, whatever idea the large farmer or the cattle-feeder may entertain, it appears to me, there can be but one opinion upon the superiority of the turnip crop, as regards the *small* farmer. In the first place, the saving of fuel to which I have already alluded, is a most material recommendation. Likewise the late period of the year at which they can be sowed, which admits of their succeeding rape, winter vetches, rye grass, annual clover, or early cabbage. The Malta turnip may be sown at any time in July with the prospect of a full crop. Thus, it is clear that three crops may be obtained in two years, turnips being one; besides this, it is to be considered that the principal use of the turnip crop to the small farmer, is the support of his regular stock, and the supply of milk and manure. Now, a stone of turnips will yield as much milk and manure as a stone of potatoes, and the same land will

yield five or six stone of the former, at least, for one of the latter. Again, when they are applied to fattening, and compared with potatoes sold in the market, (which is the usual mode of disposing of them by small farmers,) it must not be forgot, that the expense and loss of time in driving a fat cow to a fair, is nothing compared to the labour of attending the market with a horse and cart, day after day, to sell a quantity of potatoes, when both the farmer and his horse might be most advantageously employed at home in the business of the farm, and that, in the former case, he gets his money *in a lump*, whereas the potatoe-seller receives payment in small sums, which, perhaps, may be frittered away before it accumulates to any amount.

It should also not be overlooked, that even if only half the potatoes were planted which the family might require, in order to make room for such crops as would produce food for one or more cows, the value of the milk which would be thus obtained would buy more than twice the quantity of potatoes which the ground taken would have produced; and where there was little land, it might be very profitable farming to plant only early potatoes where there was a good market at hand, to sell the whole off in the end of July, and sow the land with rape and Malta turnips, for winter and spring feeding. The value of an early crop of potatoes is very often superior to a late one, and the owner would have the money to lay in his supply in November, and would have, besides, all the winter and spring feeding, and the milk and manure, which the after crop would yield. A judicious farmer should not consider himself bound to raise the potatoes he will consume himself on

his own farm. His object ought to be to manage his land in such a way as to produce him *most money*, which will always supply him with what he may want.

I think *this* must be admitted, and if so, I think it is equally clear, from what has been said, that the best way to accomplish it is, to follow the plan I have pointed out—by raising green crops—house-feeding your cattle—increasing your stock—enriching your land by the abundance of manure, and thus enabling it, in return, to enrich you by its produce; and let no one be discouraged from commencing to raise green crops, if he has the means of doing so, by the consideration he has not a cow to get the benefit of them. Supposing he is so poor as not to be able to buy a cow, still there are few people who have their health, and are inclined to be industrious, who cannot raise the price of one, two, or three young pigs, in which these crops will, in a little time, produce such an improvement, that, in the common course of things, before many months, he will be enabled to purchase the cow he was in want of, and would, most likely, not have been able to get in any other way. Vetches, clover and cabbage, are excellent feeding for growing pigs, and would soon augment their value to the amount required; and if this plan of getting a cow should fail, he will seldom be disappointed (whilst the system of farming now in practice continues,) in getting the use of a cow, for her keep, from those who have not sufficient food for their stock, by which arrangement he will have milk for his family and manure for his farm. But it is seldom that any one deserving the appella-

tion of even a small farmer, is so very low in the world as not to have a cow of some sort, and the more common case is, that he is possessed of one, at least, of those useful animals. Let us suppose him, then, to have four acres of land and one cow, and that two acres are in grazing, or put out to rest, as it is termed, and of the remainder, half an acre is intended for potatoes, half an acre for first crop of oats on last year's potatoe ground, half an acre of second crop oats, and the remaining half acre third crop oats, which, altogether, makes up the four acres; and, with a small garden, may not be considered to be an unfair representation of the general circumstances of the poorer class of small farmers. Now, if an industrious man, reduced to such a situation by bad health, or any other calamity, without capital, and without friends, was to ask me how he, as a small farmer, might contrive to extricate himself from his difficulties and retrieve his affairs—(and this is a question which, above all others, most vitally concerns the poor of Ireland)—I should answer by saying, if a small farmer means to live by his land, his first object ought to be to make every inch of that land as productive as its nature will admit of—and this can only be accomplished, (as I have stated in the commencement,) by having plenty of manure, and pursuing such a rotation of crops as shall prevent the ground from being ever exhausted. Various methods may be taken by him to arrive at this, according to his particular resources and the circumstances of his farm; but, under any state of things, he must keep in mind the fixed maxims of farming already enumerated. By reference to these, he will, in the first place, see, that wherever he intends

to put out his manure, the land should previously be effectually drained; and, likewise, that the weeds should, as far as possible, be eradicated before putting in his crop. If these directions are not attended to, a cold, wet sub soil will destroy more than half the strength of the manure, and half the remainder will, perhaps, go to nourish the weeds, in place of the crop he intended it for. The next thing he will see pointed out is, to provide for the increase of his manure by preparing the means of feeding his cow in the house, and to refresh his land by a change of crop. It is from want of attention to these points, the returns from his farm have been heretofore so much reduced that he has been kept struggling in poverty, when, with less labour and more skill, he might have been living comfortably. But as an example will make every thing more intelligible, I should be inclined to recommend him, as one mode of carrying the rules laid down into practice, (draining and clearing his land, being always attended to in the first instance,) to sow clover and grass-seed with his first grain crop, as a provision for house feeding his cow the *following year*, and he must begin early and put in kail into his potatoe ridges, and sow a succession of vetches on the stubble of his last year's potatoe land oats, to serve as feeding for the present. If there should be any overplus after feeding his cow, and that he should not be able to buy pigs to consume it, he may let such part stand for seed, the produce of which will generally be more valuable than any second crop of oats, and the straw from it will be found much superior to oat straw, as fodder, and contribute to the support of his cow in winter. He will further observe,

by the fourth rule, that the manure for his green crops, such as potatoes, turnips, &c., should be put out upon that part which has been exhausted by grain, therefore let it be given to the stubble of last year's second and third crop of oats; and, by attending to the fifth, sixth, and seventh rules, let him take care not to have any of his land or manure wasted, and, by burning the backs of the old ditches desired to be levelled, he will obtain such a quantity of ashes as will enable him, with his other manure, to sow half an acre of turnips and an entire acre of potatoes, in place of the half acre, as formerly supposed;—by this means, he will be able to bring in half an acre of the poorest part of the grazing, the remaining one and half acres of which may be used for the support of his cow, until the vetches become fit for cutting, when, if he has any ashes remaining, or as far as the summer manure will cover, the grazing may be broken up and prepared for rape. Supposing these matters to have been conducted upon this plan, when the turnips become ready for use, it will be practicable for him to fatten his cow, and sell her for a price that will enable him to make up the price of two lean ones, or, at least, to add a heifer to his stock. One rood of turnips is calculated to fatten a cow of moderate size, that has been well fed in summer, which his would have been on the vetches; therefore, he would have remaining still one rood of turnips, the curled kail, and what rape he might have got sown, to enable him to support the two cows thus supposed to be bought for the remainder of the year, until the clover would be fit for use, which was formerly directed to be sown.

In considering the foregoing, I do not see any ex-

tra outlay which can be said to render this commencement impracticable, nor any reason to suppose that the person's means of paying his rent will be in any manner curtailed; on the contrary, it appears to me that, besides the additional half acre of potatoes, the vetches substituted for the second crop of oats will produce, by the superior keep of the cow, in milk and butter, and rearing of pigs, more than double what an inferior crop of oats would be worth, and that, by these articles alone, the entire rent of a four acre farm would, in common years, be paid, leaving the profit of the remainder of the farm to go entirely to the support of the family and the increase of the stock.—But if it is clear, from this statement, that the farmer's circumstances, the first year, will not be *made worse*, it is still more clear that, the second year, they *must be made better*—for it is plain he will then have more than double his former quantity of manure, (owing to the turnip feeding and the second cow,) which, with the ashes of his remaining old ditches, will be fully sufficient to bring into cultivation all the remainder of the grazing land lying out to rest, which will now be made to yield him a valuable crop of potatoes and turnips, and he will have the manured land of last season, amounting to one and a half acres, in place of half an acre, as formerly; besides all which, he will have as good a crop after the vetches as after his potatoes, and thus there will be no part whatever of the entire farm which will not be under profitable crop; and the clover, with what vetches he may think it necessary to sow, will supply him with the means of feeding his two cows in the house; by continuing which practice, he will have sufficient manure to keep his land constantly in good

heart, and to enable him to follow, for the future, any rotation of crops he may think proper.

In order to make what I have said more intelligible, I put the statement into figures, viz.:—

Supposed Case of a Four Acre Farm.

Field No.		A.	R.	P.
1	In Potatoes, (having only one cow, and not fed in the house), he will not be able to manure more than.....	0	2	0
2	In Oats, upon last year's potatoe land,	0	2	0
3	In Oats, being the second crop after potatoes	0	2	0
4	In Oats, being the third crop after do..	0	2	0
5, 6, 7, 8	In Grazing, lying out to rest.....	2	0	0
	Entire Farm.....Acres	4	0	0

Proposed Crop, to begin an Improved System.

Field No.		A	R.	P.
1	To be sowed in Wheat or Oats, and laid down with Clover and Grass.....	0	2	0
2	To be sowed in Vetches, after 1st crop of Oats.....	0	2	0
3	To be sowed in Turnips of different kinds	0	2	0
4, 5	To be planted in Potatoes*, supposed	1	0	0
6, 7, 8	Best part of the Grazing to remain for one cow, with Vetches.....	1	2	0
	Acres	4	0	0

* I calculate the extra manure wanted to be acquired by burning the useless ditches: where the manure has been formerly so small, the fields must be small also, and the ditches more numerous, of course.

Second Year of Improved System.

Field No.		A.	R.	P.
1	In Clover fit for cutting	0	2	0
2	In Oats (after Vetches) if a second cow has been got, one-half Vetches may be necessary, unless Cabbage and Kail are cultivated	0	2	0
3	In Barley (after Turnips) laid down with Clover and Grass-seed	0	2	0
4	In Wheat (after Potatoes) supposed planted on house manure, laid down with Clover	0	2	0
5	In Oats (after Potatoes)	0	2	0
6	In Turnips, having been trenched up before the frost	0	2	0
7 8	In Potatoes	1	0	0
	Acres	4	0	0

The ditches of Nos. 7 and 8, burned, and the produce of two cows fed in the house for most part of the year, will give the requisite manure;—and, on a comparison of the crops and the keep of two cows, the return appears to be fully four-fold the value of what it was, with the certainty of the land every year getting better.

I think, any one who will afford a few minutes' consideration to the foregoing, will be of opinion that a

satisfactory answer has been given to the question proposed, and that, by a simple reference to the maxims laid down, a mode of recovery has been pointed out, which cannot fail to accomplish its object, having, for its foundation, principles which may be successfully applied to the circumstances of every such farm as the case supposed; and a more important case cannot well be submitted to the consideration of the friends of Ireland, in its present situation. The plan recommended has been selected as affording a clear and concise exemplification of the operation of the principles laid down, but it is not meant to be a prescribed course that every one should invariably follow; on the contrary, it may be changed and modified, in a variety of ways, according to the nature of the farm, which may call for the introduction of other crops. Thus, cabbage, field peas and beans, mangel wurzel, and many other things which I have not taken into account, may, in many cases, be found more desirable than those I have adopted. Where manure is scarce, kail and 1,000 headed cabbage are particularly valuable—they will grow with great luxuriance upon the back of a new made ditch, without manure of any kind, which proves that nothing more is required to insure a crop than to turn up new earth, by deeply trenching the ground before the frost sets in. Curled kail should be sown last week in July, or first week in August, and planted out as early in March as any soft weather takes place—1,000 headed cabbage should be sown in March, and planted out in June or July, as soon as the plants are sufficiently grown; both will give a plentiful crop of leaves at November, and also the following spring, besides giving a large

after-cutting, in the manner of rape, when shooting up to go to seed;—but in whatever way the object is accomplished, still the principle of house-feeding, and a rotation of crops, must be equally attended to. I am fully aware that a person whose resources enable him to buy lime or other manure, may at once succeed in making his entire farm productive, without waiting for the slower process which, to his poorer neigbour, may be quite indispensable; but the person with such resources, although he may hold a small farm, does not fairly belong to the class of those by whom the question was supposed to be put, and the answer, therefore, seems properly restricted to the single object of showing all those to whom it was addressed, that they might get on by their own industry, without any outlay beyond the means they may be fairly supposed to possess, and that if they do not better their situation, it is not by reason of its being out of their power so to do;—such being the case, persons so circumstanced, I trust, will not shut their eyes to what it is so plainly for their advantage to see. If their farms should be somewhat larger than the case stated, it may perhaps take a little longer time to bring them round, but still the improvement will be progressive, and they will be encouraged, as they proceed, by seeing that every step is not only attended with its own peculiar advantages, but likewise facilitates that which is to follow; and I therefore cannot but hope, that any among you whose cases may resemble that which has been stated, may be induced to take what has been said into their most serious consideration, and to try the effect of the proposed change in their system of cultivation, notwithstanding the fancied

obstacles which may be started by those who are too indolent to exert themselves, or so much prejudiced in favor of old habits, as to think they cannot be improved. Such people, among other objections, will perhaps say, if we follow this plan, according as the manure increases our grazing will be broke up, which is always a sure provision for our cows, and then, if the clover and turnips fail, what is to become of us?—the answer to which is, that there is little reason to apprehend any failure in the clover crop, if the land is properly prepared, in which a person well qualified, will be appointed to instruct you; but if from bad seed, or any other cause, a failure should take place, it will not affect the rye-grass sown with it, which may be cut as soil; and as any such failure will be evident by the month of September, there will be full time to put in winter vetches, annual clover and early cabbage, to supply its place, and be ready for use before the rye-grass is consumed, and the succession of cabbages may be kept up until the succeeding crop of turnips is fully ripe, or spring vetches may be cultivated to any extent. In the mean time, the land upon which the clover is supposed to have failed, is by no means lost—the rye-grass will be cut in ample time to dig up the ground and put it into turnips. It appears, therefore, there would be little cause for apprehension, even if such a failure did take place, and there is still less danger in regard to turnips, the different kinds of which may be sowed from the middle of May (when the Swedish turnip is sown) to the end of July, at which late period the Malta turnip will yield a full crop; so that, if one sowing was to fail, it may be supplied by another of a different kind. Some incon-

venience may, however, be felt, in case a failure should take place in the crop of Swedes, as they are relied upon for the latter part of the season; but this also may be guarded against by sowing a sufficient quantity of rape, to succeed the yellow Aberdeen, and yield food for the stock until the succeeding clover and rye-grass are ready for use. Others will tell you, that it is an unnatural thing to confine cows to the house or straw-yard, and that they will give much more milk upon grass; and this is very true, in *summer*, if the grass is good; the reverse, however, is the fact, even *then*, if the comparison is made, with such grazing as the small farmer's cow is usually turned out upon; but in *winter*, a cow well fed and kept warm in the house, will give twice, or perhaps three times as much milk, as what she will when turned out and exposed to cold, and hunger, and wet, upon the bare hills I often see them on, and at that season of the year materially injuring the land by poaching it with their feet, whilst wandering over it in search of food; besides all which, it is to be taken into the argument that the manure* will be saved, and that where a poor man now keeps *one* cow, he would, upon the plan of house feeding, be able easily to keep *three*. You will also, very likely, be told, that no land will bear such constant ploughing, year after year, and that the ground will be destroyed if it is not let out to rest—all such people are accustomed, when they plough their land, to put in a crop, or perhaps two or three, in succession, and they falsely attribute to the ploughing, the injury which is done,

* Mr. Cobbet estimates the quantity of manure which may be accumulated by the owner of one cow fed in the house, to be sufficient to manure one acre, and in these calculations he is not bad authority; but I only calculate on its manuring three roods.

in reality, by the crop which accompanies it. The experience of a fallow, in which the land is ploughed, successively, five times in the same year, sufficiently shews that it is not the ploughing which does the harm; and such objectors wholly overlook, or are perhaps ignorant, that the interposition of clover or vetches, between the grain crops, renews and refreshes the land more in one year, than lying out to rest in its poor state would do in four.

All these objections, when they come to be considered, are easily confuted;—indeed the people who make them do it more as a cloak to cover their own slothfulness, than from any belief in the truth of what they advance; for the case is so plain, and the benefit arising from feeding the cattle in the house, and having such an abundance of manure as to render the whole farm as rich as a garden, is so apparent, that no one can avoid being sensible of it.

There are, nevertheless, many well meaning people such slaves to habit, and so little able to form a just estimate of what their own industry and exertion would enable them to accomplish, that they despair of surmounting the difficulties which surround them; and it has often fallen to my lot to be told, with a perversity of reasoning not a little provoking—but I really believe with perfect sincerity—"that such a plan might do very well for the rich, but how could any poor man afford to farm his land in that way?" and, notwithstanding, it is evident the poor man can least of all afford to lose any gain which might be made by following a better system. He seldom thinks of making even an attempt, at what appears to him so far beyond his utmost efforts;

whereas, if the attempt was made, scarcely any industrious man could fail of success. From a sincere desire to benefit all of you, but particularly those of this unfortunate class, who, under existing circumstances, seem likely to be deprived of their small holdings, if they do not hit upon some expedient to better their condition, so as to be no longer a disgrace to the properties they inhabit, I have endeavoured, in the foregoing Address (as being the first step to improvement,) to convince you of the wretched plan you have been hitherto pursuing, and of the beneficial change which might soon be brought about, by adopting some such alterations as I have been suggesting. In this, I hope, I have at least so far succeeded, as, in some degree, to weaken your attachments to old customs, and dispose you to follow such instructions as may be given to you; and, in order to set aside any excuses that might be made, either on account of ignorance or inability, I have, with the concurrence of your landlords, engaged two Scotch farmers or agriculturists, for the purpose of giving you the instructions you so much require. You will find them to be practical men, who have had experience of every kind of soil, and know how each should be treated.—After minutely examining your different farms, they will point out to you how they are to be drained, cleaned, and prepared for the growth of green crops, so as to introduce the plan of house feeding and accumulating of manure, which has been already insisted on. Thus, your want of skill in the management of your land, will at once be remedied; and then, to provide you with manure (the want of which at present I am aware would incapacitate you from cultivating the crops recom-

mended,) your landlords have kindly consented to lend such of you as may require assistance, as much lime as will be sufficient to insure you as many potatoes as you may require for your families, on condition that the house manure you may be possessed of shall go to the other crops which the agriculturist may point out. Thus, nothing will be wanting to the perfect cultivation of your farms, but your own industry and that of your families; for the abovementioned assistance will be continued to all such as show themselves deserving of it, until they are brought into a situation no longer to require it. My employers, therefore, I repeat, having gone to such expense and trouble to better the condition of the small farmers on their estates, and the benefit to be derived by following some better plan of cultivation being so evident to the commonest understanding, no one who, by his own want of industry, fails to take advantage of the assistance offered, can have just grounds of complaint, if the land, which he refuses to cultivate, is taken from him, and given to some of his more industrious neighbours, which will most assuredly be the case, when a fair time for making the experiment has been allowed.

I trust few will be found so blind to their own interests as to force their landlords to this painful alternative; and it is with great pleasure I look forward to the prospect of seeing their estates peopled with a thriving tenantry, and covered with neat and respectable cottages, and the farms divided by hedge-rows of useful and ornamental timber, with underwood for fuel. The *cattle being kept from injuring these plantations* they would soon come to a luxuriant growth, and I am

confident would not only yield a quantity of valuable timber, but also sufficient faggots to afford a cheerful fire in the winter's evening; and if the farmer has a lease, and registers the trees planted, as here recommended, he may have, at the expiration of his tenure, even if the farm be a very small one, 100 or 200 trees, from twenty to forty years old, according to the duration of his lease, *well grown*, which they will be, if the cattle are home fed, and thus prevented from injuring them; and these trees he cannot be prevented from selling at their full value; and if his landlord even should turn him out, (which, in such a case is not likely,) he would not have to go away empty handed; and thus the *bank* of his ditch would be to him a *saving's bank*, the most economical and the most productive he could have recourse to.

When the present state of the small farmer is considered—reduced, as he often is, to potatoes and salt, and perhaps even a scanty supply of these, with a house almost unfit for a human habitation, and suffering under a scarcity of both fire and clothing; and then look forward to him in the enjoyment of the comforts of life, well fed, well clothed, and well lodged, with a cheerful fire on the hearth, and his flitch of bacon in the chimney—what a change is opened to the view, and what an ardent wish arises to see it realised! Again, when the beautiful variety of surface, which this country affords, is now observed bleak, dreary, and naked; and then look forward to it covered with well built cottages, well laid out farms, and thriving plantations, with contentment and its natural companions, good order, peace, and prosperity, reigning around, surely every one ought

to be tempted to put his hand to the work, and, as far as his influence extends, assist in bringing about a change so desirable. Connected, as I have been, with you now for many years, I feel most sincerely desirous to give effect to the kind wishes of your landlords, and to use the means they have placed at my disposal, and the influence my situation, as land agent, gives me, to promote your comfort and happiness. It is that feeling alone which has prompted me to take the trouble of thus addressing you, and to devote so much time to personally enforcing the requisite attention to the instructions of the agriculturists who are engaged for the purpose of directing you in the selection of the crops best adapted to the soil and situation of your farms, and the proper mode of cultivating them. Their appointment renders it unnecessary for me to enter into any discussion upon those subjects*, which would require more space than would be suitable to this Address, already prolonged much beyond my original intention. All I contend for is, that you shall cultivate such a succession of crops as will afford a plentiful supply of moist food for your cattle in the house during the entire year. Experience has fully proved that one-fourth of the land in this way will suffice; and, as the practice of home feeding has the additional recommendation of producing the manure necessary to bring the land so saved into profitable cultivation, common sense will justify me in *insisting* upon the practice being adopted, which, under the orders of your landlords, I

* In this respect, I would beg to refer to Mr Martin Doyle's "Hints to small Farmers" which gives most valuable information not only regarding the cultivation but, also as to the respective merits of the different crops at present cultivated in this country.

am determined to do; and if my exertions should, in any manner, bring about that improvement which is so much required in the cultivation of the soil upon which your welfare and happiness so much depends, I shall feel myself most amply rewarded. And even if the perusal of the foregoing should have no other effect than merely to awaken your understandings to the consideration of the subject, and make you to consider attentively how every thing may be turned to the best advantage, and to make the most of every opportunity of bettering your situation and increasing your comforts, which prudence may place within your reach, I shall, even then, congratulate myself that an important service has been rendered to you and your families, by

Your sincere friend and well-wisher,

WILLIAM BLACKER.

P.S.—As nothing which tends to increase your comforts in any way is foreign to the nature of this Address, I cannot help calling your attention to the high price you often give for oatmeal, when wheaten meal might perhaps yield a much cheaper and more nourishing food. If you buy wheat and get it ground at any common country mill, your hundred weight of wheaten meal will not stand you generally more, if so much, as a hundred weight of oaten meal. Now, if you take and mix a well beaten up egg with a pound of the wheaten meal, and wet it with milk made boiling hot, it will produce near a pound and a half of excellent bread,

which, by being warmed before the fire, will be as good the second and third day as the first, and will contain nearly twice the nourishment which a pound of oatmeal will yield. It also surprises me, that *in winter*, when milk is scarce, you do not try to make a substitute of broth. A single ox head, which you may buy in any market town for a shilling, with a small quantity of groats or barley, and a few onions, cabbage sprouts, sliced turnips, or any thing of that kind, will, I am informed, make twenty quarts of broth of most excellent quality; and again, in summer, when potatoes get soft and bad, if the skin is taken off, and they are put into a pot to stew, with about three pints of water to a stone, and half a pound of bacon, cut into very small pieces, put at the top, with a little pepper, salt, and onions, and the pot kept close covered, it will make a wholesome and palatable mess for an entire family. Any one wishing to get more particular information on this subject, may easily find persons able and willing to give it; and what tends to the comfort and satisfaction of a family two or three times every day of their lives, is surely well worth being attended to. Almost all of you know what a good mixture beans and potatoes make, and what nourishing food it affords; and yet, how seldom do you see raised the small quantity of beans which will be required for this purpose.

APPENDIX.

Letter from Mr. ALEX. STILL, *Agriculturist on the Estate of His Grace the Lord Primate, in the County Cavan.*

Ballyheady, 23d September, 1833.

WILLIAM BLACKER, Esq.

I duly received your letter of the 26th July, and observed its contents. The green crops on this estate, in general, are doing well. The turnip crop has greatly improved since the rain came—I think it will prove an average crop. At Ballyheady, on Mr. Veitch's farm, there are about an acre and-a-half of excellent turnips—I drilled and sowed them myself, and got them properly hoed in time, to show an example to the tenants and others. I got some hoes made, and distributed among the tenants, and showed them how to use them—I found it rather difficult to get them to thin and hoe the turnips in time. Some of the tenants have good crops of mangel wurzel, and others are deficient; they tried but small quantities of it. The clover and rye-grass have done very well every where through the estate, and will prove advantageous to the tenantry at large, if once they had their farms into a proper rotation of crops. The vetches, in general, were a good crop, and very beneficial. There will be a large quantity of vetches sown next year—they now find the good of them. The early Angus seed oats that were got for the tenants are a fair crop, and will turn out well to the grain. All the seed got for the tenants have proved to be of good quality.—73 tenants sowed vetches, 87 clover and rye-grass, 86 sowed turnips, (but some very small quantities,) and 50 tried mangel-wurzel. I think there will be more than double the quantity of green crops sown next year, by the tenants on the estate, and several neighbouring gentlemen and

farmers say, they will sow clover and turnips next season. I have been advising them here to try the cultivation of wheat; I have got but a few to say they will sow this season. There are a good many tenants will sow rape in their black ground. I think it would be beneficial for the tenantry, if His Grace the Lord Primate had a vacant farm, and improve it as a model, and get a good ploughman that could work horses properly. I should not fear to pay the common rent here, and at the same time, show an example to the tenantry. By putting it into a regular rotation of cropping and improvement, there might be a saving by it to the Lord Primate, by me getting the keep of a horse, &c. off the farm. I have got a few tenants to level their old useless ditches, and about 20 more have promised, if the harvest were finished, to level the useless ditches, and put their farms into lots for a regular rotation of cropping. I have got several of the divisions on Ballyheady straighted and regulated, which will be an advantage to the tenants, and a considerable improvement to the look of the place. Ballyheady, in course, will be a pretty place, with the new houses that are going up and other improvements that are making. If the crops were off the ground, I intend to get several more of their marches straighted, and their farms put into as regular lots as possible I got a few of the tenants to use lime for their potatoe crops, but not so many as I expected, considering the long credit they are to get of the lime; however, there are a great number of the tenants who promise to use lime for their potatoe crop, and reserve more manure for the turnip crop next year. There will be a considerable extent of drains and ditches cut this autumn and through the winter, if the weather is favourable. I found out several impositions in people cutting bog for turf on the Primate's estate, that had no right to get any without paying. I have made about £15 more money out of the Ballyheady Bog this year than was formerly made, and by getting a few drains cut in the soft bog, and putting it into regular lots, there will be a good deal more made of it next summer. There is another very

extensive bog at Drimbagh, that there could be a good many acres set in,—I found several cutting in it that had no right, and intend to make them pay for them. The country round here had been in the way, formerly, of using great liberties in cutting bog for turf on the Lord Primate's estate. I intend to give every tenant a certain quantity of bog, (what would be considered sufficient according to their holdings,) as I understand many of the small tenants have been in the way of cutting large quantities and selling it—the tenants get all bog for turf gratis. I intend writing to some of my friends in Scotland, in course of a month, and will enclose to you, and feel much obliged to you to get them franked,—and remain,

Your most obdt. Servt.

ALEX. STILL.

My dear Sir,

In compliance with your letter of the 22d instant, I beg leave to state that I had nearly an English acre of rape this last Spring, on which I fed 12 cows, with a little hay, for one month, on which I made a large profit, besides getting manure to set the same ground in turnips. As part of my profit this year was occasioned by the great advance in the price of cattle, I do not think my gain this year can always be expected to be realised; but I think that, in all ordinary times, a springer well laid in the 1st of April, when in a poor condition, and well kept on rape for five weeks, and then sold in thriving order, ready to calve, ought to leave a profit of 20s. to 25s., according as she has been judiciously laid in. I think a full English acre, in rape of good quality, and sowed with 16 lbs. of seed per acre, ought to feed 8 to 10 cows entirely, for the five weeks, which, at the above rate, would give a profit of £10 per acre, besides the manure; and I am so well satisfied with the experiment I made this season, that I have above three acres of rape coming forward, to be consumed in the same way next Spring. I have manured above four acres of land with the ma-

nure made by house-feeding, from the 1st May till the 1st October, and have no doubt that, by persisting in that practice, to make my land, which was originally of the poorest quality, in a short time as rich as a garden.

I remain, dear Sir,
Your obedient and very humble servant,
1st Nov. 1833. WILLM. DOUGAN.
To Wm. Blacker, Esq.

SIR,

BEING induced, by your printed Address to the Tenants of Earl Gosford, to try the experiment of farming, by house-feeding my cattle and following the rotation of crops, I find, by experience, I can keep 3 cows and 1 horse, on 23 acres of land, *this* year, more than last season, and have the same value of oats and potatoes as ever I had. I began to practice the system of house-feeding *last* year, and the green crops enabled me to increase my stock 2 cows at that time, so that, in all, I have 5 cows and 1 horse more than when I commenced the system—my stock now being 2 horses, 9 cows, 1 heifer, 2 calves, and 4 pigs. I have but a new lease, and yet I was able, by the sale of butter, to pay the entire rent of my farm last year, and I have the opinion I can do so this season again.

I am, dear Sir,
Your very obedt. servant,
THOS. INGRAM.

Drumhoney, Aug. 29, 1833.
To Wm. Blacker, Esq.

P.S.—It is my opinion that, when my farm has been manured for another season, 4 acres will be as profitable to any industrious tenant, as six acres, if farmed under the old system.

SIR,

I HOLD 5 acres of land, No. 648, on which I formerly kept a cow and a pig;—but being induced to try

the experiment of house-feeding, from the printed Address by your honour to Earl Gosford's Tenants, I find I can keep 2 cows and 3 pigs, in prime condition, on less land then when I kept one of each. This season being my first attempt, I fed the above stock on 3 roods sown with clover and grass seed;—in the next season I can feed a greater stock. For the utility of *house-feeding*, I refer to my neighbours, who hold the same quantity of land and sow the same seeds; but from *grazing* their clover, they can keep but one cow. The difference in the quantity of the manure, is a very essential point.

Your very obedt. servant,

Grayhilla, Sept. 2, 1833. JAMES CULLY.

To Wm. Blacker, Esq.

SIR,

WHEN I commenced under your plan, I had only 1 cow; now I have 3 head of cattle, and in another year I think I can feed more. From the benefit that is from house-feeding, I think it would double pay a man for his labour—milk and butter is quite preferable to that of country pasture. I can say I am well-pleased with the plan of house-feeding, and have more crop than when I had only one cow.

JOHN HOGG.

To Wm. Blacker, Esq.

SIR,

I HOLD 6 acres of land, and I formerly kept 1 cow and a breeding pig. This season, having sown a field of clover and green crops, I was enabled to keep 3 cows and the pig, as formerly; and I find, by experience, that good clover will feed three times as much as common pasture, and the increase of the manure is very essential to farmers.

Your honour's very obedt. servant,

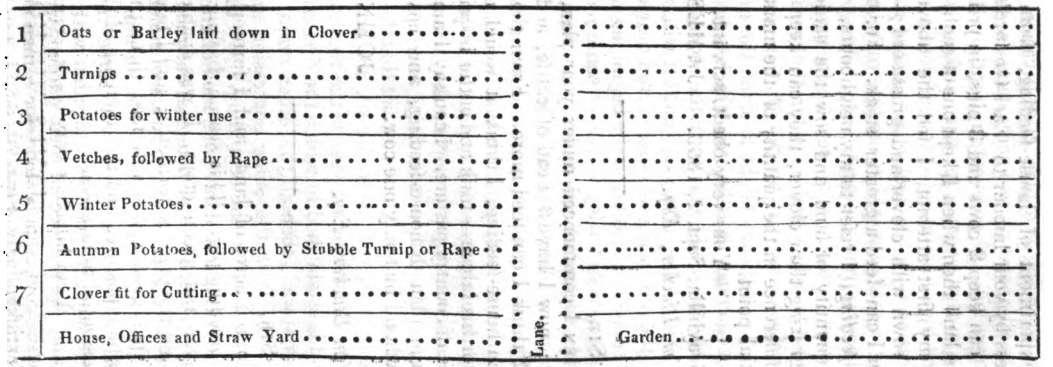
JAMES MULHOLLAND.

Carrickgollogly, Sept 2d, 1833.

Wm. Blacker, Esq.

ROTATION OF CROPS

For a Cottage Allotment of Two Acres.



The preceding is a plan of cultivation adapted to a cottage allotment of two acres, and is supposed to be measured off, 20 perches in front by 16 perches in depth, so that every 2 perches make a rood, which is marked by a line intended to represent a furrow, communicating with the double line up the middle, representing a path, by which manure may be wheeled up in a barrow from the straw yard. The house, offices and straw yard are supposed to occupy half a rood, leaving the other half rood for the garden, and the remaining 7 roods are for the rotation of crops, which are set down as they ought to stand the first year, and are so contrived that the crop which is in No. 1 Field the first year shall be in No. 2 the second year, and so on in No. 3 the third year, until it will have come to No. 7 the seventh year—each crop moving a division on every year—so that, in the beginning of the eighth year, the oats or barley will have come round again to No. 1 Field, and all the others in succession, precisely the same as they were at first. This has been so arranged, in consequence of observing that country people are confused by the rotations which are set down in the different publications upon the subject of cottage allotments, which, it is hoped, this arrangement will obviate, as the No. of the fields correspond with the years of the rotation, and point out that the crop in No. 1 the first year, will be in the 2d, 3d, 4th or 5th field in the 2d, 3d, 4th or 5th year of the rotation, and when the field is established in which the first crop of oats or barley is sowed, then all the other crops occupy the following fields in the same succession and order, in which they stand in the beginning. By this arrangement the cottager will have one rood of grain, one rood of turnips, three roods of potatoes, one rood of vetches, one rood of clover, and two roods of stolen crop, viz. rape after vetches, and stubble, turnip after early potatoes. It is conceived that three roods of well manured land, in potatoes, together with a rood of grain, and the produce of their garden, will, with the milk of the cow, supply food for a man and his wife and two children,—and that the rape and stubble turnip,

with the rood of *vetches*, *clover* and *turnips*, will feed the cow all summer, and admit of a little clover hay being saved for the winter, besides feeding two store pigs, with the help of the cabbage from the garden, the kail which may be reared among the potatoes, and the refuse of the house—and the profit on selling off the grown pigs and laying in younger, with the spare milk and butter of the cow, ought to do more than pay the rent, and perhaps admit of their fattening a pig for their own use.

John M'Watters, Printer, Armagh.