

these cows footed up over \$100 per cow. This again being largely owing to following out a judicious system of soiling. These cases which are given could be multiplied to any extent.

Now, while there can be no manner of doubt as regards the advantages and profits under certain conditions, it is a question upon which there is plenty of room for discussion as to what extent it could be carried out with profit on the average of the high-priced and first-class tillable lands of this province. My own opinion is that the time is not very far distant when on these high-priced lands the plan will be a very common one. In dealing with this or any other matter relating to farming many things are to be considered, for it does not by any means follow that a system of farming which is the best that could be followed on high priced tillable land would also be the best on land worth \$15 or \$20 an acre, or on a farm a large part of which might be fit for little else but pasture. But in dealing with the question, I purpose to consider from the standpoint of an Ontario farmer owning a farm of average quality.

Among the advantages to be considered is the saving of land for whether it is carried out as a general or partial system does not in any way affect the argument for or against. If, as is held by those who have given it a full and fair trial, that one acre of soiling crops will produce as much food as three acres (and some good authorities place it at four) in pasture, the saving will just be in proportion to the number of acres sown. My own experience leads me to think the difference quite as great as here stated. If that is correct, it then follows that for every acre used in growing soiling crops, it leaves two acres more that are available for growing the other crops of the farm. Or putting it in another way: the farmer owning a good tillable farm of a hundred acres can, by keeping the same quantity of stock, have at least twenty acres more in grain crop, and the land under the plough be yet kept in as high a state of fertility, owing to the large quantity of summer made manure of the richest quality which, under the pasturing system, would be in a great measure lost.

One of the arguments used in favor of a general system of soiling is, that it does away in a large measure with the necessity of having fences, in this way saving a considerable annual expenditure, doing away at the same time with the propagating ground for foul weeds of all sorts, and adding to the available acreage for crop growing to the extent of the land occupied by fences under the ordinary system. I am not at all clear that it would be wise to adopt the system as a whole, but rather think what should be done on all but very small farms, is to work into it gradually, and even then I am inclined to think that to carry it out partially would be found to be the best. In this way there would be no saving in fences. The experience of many successful breeders leads them to think that the stock is all the better for being turned into a pasture-field at night, especially during the hot months; and certainly there are many things to be said in its favor. Perhaps there is no way in which growing forage plants and feeding it cut, shows to better advantage than in raising calves. These should in all cases be kept in cool and darkened stables during the hot months of summer, and protected as well during the changeable weather of spring and fall. If allowed to run out during the hot weather, the heat and annoyance from flies keep them in a constant state of uneasiness. These evils incident to pasturing are entirely removed when kept in buildings suitable for the purpose. There is no need to speak of the much better shape they appear in at the end of the season, every one who knows anything about stock management has seen for himself.

After having dealt with the question of soiling the ordinary stock of the farm, it may here be profitable to discuss whether a great deal more might not be done in the way of making beef in the summer, and fattening sheep and lambs in the fall. The latter I have done a good deal in for many years, and with good results. A lot of lambs bought last September at prices varying from \$2 50 to \$3 60, making an average of \$3 07, and weighing 116 lbs. when sold, realized on the 11th of December, \$5 80 per head. With the exception of a few days these lambs tasted nothing but rape, with an adjoining grass field to run in. One thing to be said in favor of summer feeding is, that it requires much less food in warm weather to make the same gain as in winter. If it pays to stall feed in the winter and sell in the spring, why will it not pay equally well or better to fatten in summer and sell at Christ-

mas. My own theory is that it would pay a great deal better, for the reason that no extra food is required to counteract the cold, and also for the reason that a larger quantity of cattle food can be grown per acre for summer than for winter feed. Under proper management it can be so arranged that each of the soiling crops shall come in at a time when it is of most value, and even in Ontario, with our comparatively short summers, a good deal can be done in the way of growing two crops during the season. Take rye sown in the fall upon land required for roots or for the later sown soiling crops, and a full cut can be obtained in time to re-sow and have time left to grow a full crop of rape or fodder corn. Although winter rye makes a wholesome soiling crop when fed alone, it is better to be fed with clover; it seems the two make a better balanced ration, the over-succulent clover being modified by the less succulent rye. Clover comes in well after rye, taking a good place between it and oats and peas, or oats and tares. I have frequently heard oats and peas spoken of as a valuable soiling crop. Peers and Stewart, both good authorities, place a high value upon it, the former considering it the most valuable crop grown for summer feeding. My estimate of it, judging from my own experience, and I have tested it pretty fully during the last year or two, is, that it is in no way comparable to tares and oats. The principal objection I take to it is, that when fed uncut—that is, when not passed through the chaff-cutter—unless fed very sparingly, both cattle and horses will leave the peas. If any of the gentlemen present have done much in feeding these crops I would like to know what their experience has been. Another forage crop, very highly spoken of, and which is placed high by the same authorities already alluded to, is Lucerne. This I also found a not very satisfactory crop to grow. It costs a good deal to seed down. In my own experience it winter killed badly, and my stock did not take well to it, horses especially would not eat it. Quite a quantity was cured for hay, and although nicely cured and getting no rain, I found it to be poor stuff. How is it that my own experience has thus led to such different conclusions from the experience of others, who are no doubt good authorities? I wish some one could clear the matter up. I consider the following the best soiling crops: clover, followed with tares and oats sown in equal quantities, say two bushel of the mixture; these to be sown at different times, so as to cover the period until green corn comes in. I have already spoken of rye as a valuable crop for early spring, but I must admit that of my own knowledge I do not know very much about it; but from what I have read and heard regarding it, believe it to be valuable as coming in early before the other crops. My intention is to sow a considerable breadth the coming fall. The value of corn as fall or winter feed is too well understood to require much to be said about it. It should never, however, form the whole ration, but should be fed in combination with other more nitrogenous food. There is still another crop, although perhaps not exactly what may be called a soiling crop, namely, rape, which is very valuable for late fall feeding. The value of this for late fall feed is not sufficiently well understood. One of the reasons why it is not more grown is that it is supposed by many who have tried it, that the risk from bloating is too great to make it safe to turn stock on. This I think is in a great measure a mistake, and arises mainly from mismanagement. When cattle, sheep or lambs are first put on, it should be when they are quite full; gorging themselves on an empty stomach is very likely to cause bloating; but once let either cattle or sheep be put into a field of rape, the best way is to leave them there; in that way they are always full and never do more than nibble a little at a time. When the weather begins to get too frosty to leave them on at nights, always be careful that they have a full supply of food before they are turned on in the morning. I have been feeding it for many years and never lost but one calf, and that was clearly traceable to carelessness. For putting on a lot of flesh in a short time there is nothing that I have ever seen that will in any way compare with it. For cattle that are intended to be stall-fed in the winter it is a very cheap and easy way of putting on a lot of flesh. For lambs, the best way is to turn them on every morning as long as snow will allow them to eat. At no time do they appear to thrive better than when the leaves are pretty well eaten off, and they have to take to the stalks. In growing this crop a very general mistake is made in sowing too thickly. Three-quarters of a pound of seed sown on thirty inch drills

is abundance. With that quantity of seed the chances are that there will be two or three times the bulk of feed that there would be if three or four pounds were sown. Rape, like turnips, is all the better for plenty of horse-hoeing; the more the horse-hoe is used in dry weather the better the crop. It answers well to take the place of a summer fallow. With an application of one to two hundred pounds of gypsum to the acre when the plant is well up, the yield will be often doubled. I would strongly advise any one who has not tried it, to experiment with a small piece for late fall feed. It is a good while since I came to the conclusion that it was a pretty costly way of making meat to tie up cattle in November, and put on all the flesh in the winter months. It is questionable if there is any profit at all, considering the price of stockers in the fall, and the lower price now obtained for beef.

One of the greatest benefits to be derived from soiling is the large increase in the manure supply. By this system all that is made is saved, and can be supplied to the land in the best form, whereas all the droppings on pastures is in a great measure wasted, if from no other cause, by these droppings nearly destroying as much feed as they produce by the additional enrichment. When soiling is practised to any considerable extent, it is safe to say that the extra value of the manure, when quantity and quality are considered, is enough and more than enough to meet all the extra expense of labor, in cutting, hauling and feeding.

Another important consideration is, that soiling will, if properly managed, clear the foulest land of every noxious weed. This may be set down as a very strong point in favor of the system. Tens of thousands of acres of the most fertile land in Ontario are comparatively worthless from no other reason than that the white daisy, mustard, wild oats, thistles, and every noxious weed occupy the soil to such an extent that there is hardly room left to raise a crop sufficiently remunerative to pay for the labor. When a system of soiling is gone about intelligently, weeds are not allowed to mature. Annuals cannot survive a second cutting. Perennials are cut before the seed forms, and as every successive crop is cut green weeds must give way. Even when the soil is full of weed seeds, whenever they come near enough the surface to germinate, the first cutting generally kills them. Fields that are foulest with weeds, if convenient to the homestead, might be used for a few years in growing soiling crops and thus rendered clean. Soiling certainly seems to be the surest and cheapest way of cleaning land when it has become excessively dirty; and unfortunately there are too many farms in this country which may be spoken of in that way, without at all using language too strong.

While a very great deal may be said in favor of soiling, not much can be said against it, except the extra cost of labor. That is a question every one must work out for himself. A common sense way of looking at it is, will that labor yield a profit? There appears to be no reason why any farmer should object to pay for extra labor if it is found that there is a profit in it. It is not often that a man becomes rich from work actually performed with his own hands, but more generally on profits derived from money judiciously expended in labor or otherwise. The observation of years has only confirmed me all the more strongly in the belief that the farmer who succeeds best is generally the one who farms liberally. Labor may often be performed and money expended for what may give no immediate returns. Many a farmer fails through not looking far enough ahead. There is a great deal of work often left undone on a farm which, had it been performed, would, after having paid its cost, have left a large margin for profit. We farmers are a little too apt to confine our operations to that from which we expect immediate returns.

To sum up, it may be claimed in favor of the soiling system, that stock would be more comfortable; that when reared for beef the greatest weight could be secured in the shortest time, this also meaning the greatest profit. That looking at it from the dairyman's standpoint, the gain would even be greater than on a farm where beef and mutton are the chief considerations, greater for the reason that the cow requires less exercise than almost any other domestic animal. In corroboration of the statement that the system is especially adapted where dairying stock is kept, it may be said that the proprietors of some of the most extensive dairy establishments in the neighborhood of Edinburgh and Glasgow claim that the produce of one acre fed to the cows in the stalls will produce as much milk as five acres in pasture.