

being undermined is something new to us. In the absence of details we can only say that a farther knowledge will probably show that there has been shockingly bad work somewhere. Collars are not required except for wet sands. For the drainage of a house cellar, tight pipes are the best, with spigot and faucet joints, which ought to be rammed hard with strong clay. Elbows can be got for these. For other cellars, where there is plenty of fall for the water, tiles do very well with collars. They ought never to be laid close to a wall, but about three feet from it. Elbows are not made for tiles, nor are they required, as tiles can be laid to a small radius.—Ed.

### Thistles

To the Editor.

SIR,—I should like to say something encouraging for your correspondent "Enquirer," if possible. But unless he has overstated his weakness, or has represented himself as being more impatient of difficulties than he really is, I fear I shall not succeed. I have no new method of thistle-killing to suggest; but if I assure him that the old ones may be used effectually, and that he takes a mistaken view of the expere (arising, if he will forgive me for thinking so, from a limited apprehension of the science of agriculture), and then exhort him to firm resolve, patient perseverance, and methodical effort, I may perchance be so happy as to induce him to reconsider the following passages of his letter.

Says "Enquirer," "Recently I went to look at a very beautiful farm, but almost every field was badly infested with thistles;" and again, "if I cannot get a farm without thistles, I shall decline one at all, unless there is a less expensive way of dealing with them than the one 'Vectis' proposes."

My own feeling would be, if a very beautiful farm were offered to me, and I wanted to buy one, that its being infested with thistles would not, alone, be an obstacle to the purchase of it. For—assuming that the expression "very beautiful farm" means a farm with great natural advantages, and, perhaps, some other striking qualities—since I could destroy thistles by the ordinary methods of good tillage, but could not so readily find a substitute for natural goodness of quality, I should deem it wiser, on the whole, to buy the beautiful farm, thistles and all, than to trust to the precarious chances of finding for sale a good farm without thistles; for the men of Canada, so far as my observation goes, do not think it "smart" to sell farms of any sort while they are in good condition.

Your correspondent objects to "Vectis'" thorough summer fallow, on the score of expense, which he estimates at fifty dollars per ten acres, or five dollars per acre. Why, Sir, that farm which, whether be-thistled or not, is not made to undergo at stated periods some sort of effectual cleansing, must needs fall into very miserable plight, and it is to be

feared that few of us can go far from our own homesteads without seeing various degrees of exemplifications of this necessity. Upon the choicest and cleanest land some such treatment is absolutely essential. It is everywhere admitted that these operations are the most expensive of all ordinary agricultural work, and for that reason they are, as we see, either altogether shirked, or very inadequately performed by not a few farmers. Hence, thistles and all the tribes of weeds. Hence, too, ten or fifteen bushels of spring wheat from land which would produce thirty or thirty-five, and twenty bushels of fall wheat from land which, even without general and thorough underdraining, would produce forty or forty-five bushels. In this fallow section of the Canadian farm really lies, after all, the true and most cogent reason why writers in the old country are able, when they have a purpose to serve by it, to almost ridicule our pretensions to living in a grain-growing country, and to speak with contempt of the outcome of our harvests.

The spirit of enterprise, which is not seldom disastrous in other departments of life, might with far greater safety be adopted by farmers who hug the present dollar, or put it out at usurious interest (itself a source of infinite mischief), and lead a dreary life upon their half-tilled farms, uncheered by those hopes of improvement which stir the minds and stimulate the energies of other men; while their sons, discouraged by the prospect, canter off to simper out their lives behind a counter, with a noble country like this around them. How different in England and Scotland, where, to become a farmer, like his father, is the ambition of nearly every boy reared on a farm; to whom an announcement on leaving school that he must now prepare to seek a livelihood in a city, is the shattering of dreams and hopes of entering upon a country life. Happy for Canada when so healthful an ambition shall take possession of her young sons. It is for their fathers to bring that state of things about; there is room for them at home.

#### SYSTEMATICALLY ENCOUNTERED.

Resuming the subject of the thistle difficulty, I now return to the letter of "Enquirer." Here we have a gentleman, whose letter gives evidence of a good education, hesitating to enter upon a "very beautiful farm,"—no, not hesitating—"declining" to take a good farm because of the thistles.

I am far from believing that bare fallowing is the most profitable treatment within reach, though it is the speediest as regards thistles, and involves the smallest present outlay. I only insist here that no farm can prosper without some such outlay, and that five dollars per acre, if it can be done for such a sum, is a mere bagatelle. I suppose the summer fallow to be, as is most convenient, the first step in a systematic rotation of five, six, or seven years; each crop in the course is supposed to, and really does, profit by it. Divide, then, five dollars by five, six, or seven

or by whatever number of years may constitute your course, and see how insignificant is the charge per annum per acre, as compared with benefit accruing.

So much for the summer (or bare) fallow. But supposing that for a bare fallow hoed-crops of Indian corn and roots be substituted as the first member of the course. "Enquirer" would not be alone if he objected to this also, as being too expensive; yet, when all the charges upon a field of Indian corn and roots, thoroughly ploughed, hoed and manured, (considerable as those charges are), come to be apportioned amongst all the succeeding members of the rotation (as it is obvious they ought to be) who would not incur the outlay who had observed the wonderful renovation thus brought to the farm? Thoroughly ploughed and hoed, and well manured, the land must be, for upon these depend the force of the whole argument in favour of the plan, and eventual profit to the farmer. And this process, comparatively expensive though it be, apart from the destruction of thistles, apart from its effects upon succeeding crops, and regarded only as a means of making beef, mutton and pork for market, is a paying enterprise in the long run. Happily, at this day, the number of farmers following out such a system because they have proved it to be profitable, renders argument and demonstration unnecessary. Where it has long been well practised, their farms and their fortunes will demonstrate. Let the sceptics go see.

Under a judicious rotation and careful general culture, neither thistles nor other weeds have much chance of regaining their ascendancy between the periods of hoed crops or bare fallow, several opportunities occurring of disturbing them. We will suppose a hundred acres of land divided into six sections, for the purposes of rotation, and that the succession of crops is as follows:—

Section 1. Sixteen acres Indian corn, potatoes, turnips, bare fallow. As much of the land of this section as can be well manured to be under hoed crops. The unmanured remnant, if any, to be bare fallowed, and the absence of yard manure to be supplied, at the earliest opportunity (which will occur at a subsequent stage of the course), by ploughing under a fall crop of clover; unless sheep can be folded upon a crop of unmanured white turnips, or, still better, upon white turnips manured with bone dust, superphosphate, or guano.

Section 2. Sixteen acres wheat or barley, seeded with clover (thickly sown), and timothy or some other grass.

Section 3. Sixteen acres hay, which may be twice mowed if thistles abound, in which case the first mowing should be very early.

Section 4. Sixteen acres pasture. If the land be not very poor, a good crop of clover may still be expected here, which may be ploughed under on that part of the land which did not receive yard manure where fallowed.

Section 5. Sixteen acres peas and oats.