

The Wheat and the Midge.

We transfer to our columns nearly the whole of a letter on the above subject, which appeared in a recent number of the *Brampton Times*. Its author is Mr. Samuel Gray, of Mayfield. We have appended a few notes on certain parts of the letter, and will only add by way of introducing it to the attention of our readers, that we look upon it as a most sensible discussion of a matter which is vitally important to the farmers of Canada, especially at the present time.

"The farmers in this neighbourhood are sad sufferers this season from the ravages of the midge, and naturally enough it forms the topic of conversation wherever a few casually meet together. It is painful to listen to them as they describe the state of their wheat crops, and the general cry may be condensed, without exaggeration or burlesque, into the following stanza:—

Plague take the fluttering little midge
Myriads swarm on every ridge,
The wheat is ruined every head
I shall not even have my bread."

There may be very little poetry in the above doggerel, which my common place-muse has suggested, as being the burden of the lamentations of the farmers of Peel this season, but it cannot be denied that there is, unfortunately, too much truth in it, for the contentment of all individuals, directly or indirectly dependent on the profitable cultivation of the soil. Much of the wheat in this section will scarcely pay the expense of cutting, much less of threshing and all the other incidental expenses attendant upon harvesting, but the worst feature of this deplorable visitation is that the majority of farmers, especially those dependent on rented farms, are in a miserable state of dependency, without energy for the present or hope for the future; ruin, utter ruin, they firmly believe stares them in the face, and were you to listen to their doleful predictions, their only certain resource will be to flee from this pest-stricken land, and locate in some more favoured spot where midges, rust, wire worm, Hessian fly, &c., are unknown, and where wheat is free from all those ills which periodically attack the staff of life in every country where it forms the staple of subsistence. (1.)

The problems to be solved in this emergency are.—Does there exist a remedy? Must farmers abandon the cultivation of fall wheat for a time and trust entirely to spring crops, which are equally uncertain in this precarious climate? Is science powerless to point out the antidote, or rather preventive to this evil which threatens to effect so severely the material prosperity of Canada West? I remember seeing a few years since in an agricultural paper published in the United States, an announcement from one of the mammoth farmers of the fertile west, offering a reward of one thousand dollars for any plan of cultivating wheat so as ensure its ripening a fortnight earlier than common. If my memory be not at fault the object was to force the wheat into such a forward state as to enable it to stand the attack of rust or some other enemy; be this as it may, it appears to me that if the farmers of this or any other section could succeed with certainty in forcing forward their wheat, so that the skin of the berry should become too tough for the lance of its puny but fatal enemy to penetrate, then I think they need not abandon the cultivation of fall wheat, as has been done in many sections of this continent, and that too for several successive years; but on the contrary might rely on almost a certain average crop, with favourable seasons. Now, in order to achieve this desideratum, this rapid growth, and at the same time secure a plump bright sample, not liable to shrink, involves many serious precautions, a failure in any one of which would materially affect the desired result.

Two obstacles present themselves which must be overcome in any field in which the experiment of forcing wheat is to be tried, before the stimulants should be applied, or it would be only labour and money lost. As a general rule the soil contains too much water, and too little vegetable mould or humus. In a word, efficient draining and ploughing in of green crops must be resorted to, to bring the seed bed into proper mechanical condition favourable to rapid vegetation. (2.)

Land well tilled and drained, in the first place requires the presence of all the organic and inorganic constituents necessary for the perfect development of the wheat plant, and assuming (which is very rarely the case) that there is no deficiency of any one constituent, still in the most favourable season, neither too wet nor too dry, nature will take her own time—the food of the plant must be gradually brought into that soluble state in which only it can contribute to its growth, the vegetable, the animal, the mineral. The saline substances in the soil required must be

dissolved or they cannot become food for the plant, and their presence in the soil is perfectly useless so far as the present support of the plant is concerned, for it cannot digest solid food, or even take it into its system; the food must be previously digested by the combined process of decomposition and solution, before it can be absorbed into the delicate veins of vegetable organization.

That this view of the subject is founded upon correct data, is borne out by the two modes which have been successfully adopted in the mother country for stimulating the growth of nearly every species of crop, viz., top dressing and liquid manuring. The former method we have adopted here to stimulate the growth of clover, and its beneficial effects are too well understood by the majority of farmers to require explanation; occasionally it fails, but very rarely, unless from want of rain, as in dry weather it cannot be dissolved and carried down to the minute and delicate rootlets, and in its solid state it is perfectly inoperative. On the other hand liquid manure never fails, the crops of grass raised in the British isles, through its agency, are perfectly astonishing; the weight per acre would appear to be incredible were it not so well authenticated, and it is found to be equally beneficial when applied to the cereals. How can it be otherwise; since all the fertilizing ingredients, whether of barn yard manure, guano, superphosphate, or lime, &c., if not actually in a perfect state of solution at the moment of application, speedily becomes so by the decomposing influences in the soil, assisted by moisture, and will be in the best possible state for quick assimilation with the substance of the growing plant? (3.)

The value of irrigation, pure and simple, either by the rains or by flooding of the land by nature or artificial means, in countries subject to long continued drought is too well known to admit of cavil, but when the fluid is literally charged with fertilizing substances, as are the waters of the classic Nile when they overflow the Delta of Egypt, their happy effect is increased an hundred fold, and it is this peculiar property of the waters of the Nile, strongly impregnated with nitron and other fertilizers which has enabled the inhabitants of that country to raise such splendid crops of grain and pulse year after year for so many successive centuries, and which obtained for it in ancient times the just distinction of being the granary of the world, as the Western hemisphere is at present; but when the annual inundation fails or is deficient, the labours of the husbandman are comparatively worthless. (4.)

The scientific agriculturists of Britain have laid it down as law, that "if high farming" will never pay—poor farming never can. To which class the farmers of Canada belong there can be little question. The soil is literally alive with insect pests, which would not be the case were a sufficient quantity of alkaline and saline constituents of the plant present in the surface soil. The conclusion I have consequently come to is this.—that if our farmers would select the earliest varieties of wheat with a tough skin, and apply liberal top-dressings composed of various fertilizers, as their judgment preferred, followed by liquid manuring also, containing fertilizing constituents, having previous to sowing limed their lands liberally, combined with a moderate sprinkling of salt to assist its action, by forming *Chloride of Calcium*, that the larger portion of the larvæ of those insect pests would be destroyed, and that the wheat plant would mature its seed-skin so early as to defy the attacks of the midge, and its stalk be so well glazed with silicic acid as to be rust-proof, and that it would prove after all the most reliable crop as a staple, by a judicious rotation, for this latitude.

The first question which naturally presents itself is,—how are the farmers to procure a sufficient quantity of water with which to make the liquid manure, if there be no creeks running through the lot? I reply by making a pond or reservoir contiguous to that spot where his drainage water seeks its natural outlet. (5.)

The second—how can he distribute it over his growing crops?—he could not afford to lay a system of iron pipes and employ steam-power as in England. I answer, a common watering can would be amply sufficient for the breadth of wheat which is in general laid down on our common-sized farms. (6.)

But this mode of cultivation will entail increased expenditure, which he can ill afford; the objection is just, and in some instances, perhaps, insurmountable, but be it understood that farming cannot be carried on profitably on old cleared lands, either here or any other country unless the agriculturist is possessed of sufficient capital to enable him to employ the requisite amount of labour and keep up the necessary amount of stock in proportion to his acres. In a word, money is the sinew of farming as well as of war, and the majority of our farmers put in every year a greater breadth of land than their means will enable them to till properly."

NOTES BY EDITOR OF CANADA FARMER.—1. Change is the *ignis fatuus* by which too many farmers are allured at considerable sacrifice and no little risk, to "try their luck," as it is termed, in some new and distant region. After having effected a removal, they find, if not the same difficulties, others of equal magnitude, and it is the part of wisdom to ask, before taking flight to an unknown and untried sphere, "Whether 'tis better to endure the ills we have, or fly to others that we reckon not of." Farming is not the only business which has its uncertainties and risks; indeed, we think it could easily be shown that it is less exposed to them than most other avocations. The evils at present complained of admit to a very large extent of being remedied, and if the lessons taught by the extraordinary season which is passing over us be only heeded, the harvest of 1864 will not be the least productive one that Canada has known.

2. In the foregoing paragraph, Mr. Gray briefly alludes to a "precaution," which, of itself, is almost adequate to the requirements of the case. "Efficient draining," by opening the land more quickly to the action of sun and air, hastens growth, and brings on the desired stage of the plant at which it is out of danger from its insect enemy. The great lesson of the present season is the vital importance of thorough drainage.

3. Many of our farmers—perhaps most of them—look upon the use of liquid manure as utterly impracticable in their circumstances. But it is no such thing. A capacious tank may be constructed at no great cost, and a cart or waggon may be readily fitted up to convey the liquid to the land. The exercise of a little ingenuity along with a comparatively small outlay, would enable the farmer to apply his manure to the soil in that state in which its fertilizing properties are least liable to be wasted, and their beneficial action is sure to be most quickly felt.

4. As intimated by an esteemed correspondent in our last issue, there are undoubtedly many locations in which artificial irrigation might be employed to advantage. How independent of the parching drought which has consumed our fields would any man be who could send at pleasure a flow of water over a portion or all of his farm!

5. A large cistern contiguous to the barns and shedding, with troughs or pipes conducting the rain water from the roofs into it, is a most valuable "reservoir." Out of it the stock and liquid manure tank can at all times be supplied with water.

6. Here we must disagree with Mr. Gray. "A common watering can" is too small an affair for the purpose. A cart or waggon fitted up somewhat after the manner of the watering-carts that sprinkle the streets of cities would be more like the thing. If it be said no great breadth of land can even thus be treated to doses of liquid-manure in the course of a single season, because on a large scale the operation would be too expensive, we may reply,—granted; but the increased yield and the improved condition of the land will amply repay the cost and trouble, and show very clearly, that only capital is needed to make the operation profitable on a large scale as well as on a small scale.

7. This is no doubt very true, as is the remark quoted in an earlier part of the letter, that "if high farming will not pay, poor farming never can." It is better to till a little land thoroughly than to skim over a large surface. Deep acres are better than broad ones. And though the objection will doubtless be urged to such suggestions as the foregoing, that they are all very well for those who have money to carry them out, yet we venture to think a more judicious application of available capital and labour would do much to make farming more profitable, and farmers more contented with their lot.

MANY POTATOES FOR ONE.—M. J. Cowell, of Cayuga county, N. Y., has been experimenting upon the yield of potatoes, and succeeded in getting 217 from one potato, the most in twelve experiments—variety not named.