Agriculturist and Canadian Journal.

TORONTO, MAY 1, 1848.

PLASTER OR GYPSUM.

A subscriber met us the other day, and desired to know our opinion of the nature and benefit of plaster. He said some of his neighbors who had used it were in favor of it, and others thought it injured the land. He wanted to know what scientific men had said of its mode of action and effect upon the soil. We promised to publish for his benefit, as well as for that of our readers generally, such information as we could collect on the subject.

Great difference of opinion exists even among scientific men, as to the *manner* in which plaster produces its effects upon plants. But that it *does* produce effects, which is the most important part of the question, we believe is not denied by those who have given it a sufficient trial. Chaptal, a distinguished French chemist, thought its power was owing to its stimulating agency produced by its action when dissolved in water. Sir H. Davy was of opinion that it acted as a direct food for the plant, being found to some extent in those plants on which it exerts most power. Leibig ascribes its value to its giving a fixed condition to the nitrogen of ammonia which is brought into the soil, and which is indispensable for the nutrition of plants. Dana, attributed its effect to the action of the lime and acid of which the plaster is composed, on the organic matter and silicates of the soil. Later discoveries and more experience would lead us to the conclusion, that neither of these opinions is quite correct, or will account in full for the action of plaster. If its action were due to the ammonia which it fixes in the soil, then it ought to be equally efficient at all times and in all places, which we know it is not. And if it acted directly as a nutriment, we should expect its action to be as constant as that of farm-yard manure, which those who have tried it well know is not the case. But leaving to the scientific experimenter the complete solution of this question, which, with the advance already made, will no doubt soon be attained, we have arrived at certain facts in the history of this substance, the knowledge of which is of great service to the practical farmer. We subjoin a few of these facts:—Plaster does little or no good *on heavy wet soils*. It produces no sensible effect unless used in *large quantities*, on strong *clay land*. *Light*, *sandy*, or *loamy* soils are those on which plaster is used to the best advantage. Clover, lucerne, and other broad leaf grasses; potatoes, cabbages, and the leguminous plants, such as peas, vetches, &c. are the vegetables on which it exerts the most powerful influence. The narrow leaf grasses, barley, oats, and even wheat are not much benefitted by it. When applied to wheat its action is not to be depended on; its effect upon the *clover* and other grass seeds usually sown with this grain, is more marked and certain, though in some soils deficient probably in lime, it is found to promote the growth of wheat. Its effect is much more striking when applied with *manure*. From *one* to *two bushels* per acre is considered enough for one application. It should be sown in the spring when vegetation is somewhat advanced, say in the month of May. Heavy rains injure the effect. In some parts of France they prefer to sow plaster after the *first cutting*, to avoid the heavy rains in the spring. It should be sown in calm weather in the evening or morning, upon the dew, or before or after a slight rain. Its effects last through *two seasons* and frequently longer. It is a stimulant as well as a manure, and has a tendency to exhaust the humus or geine already in the soil, which renders it necessary to add manures when the crops are carried off the ground.

Many persons say they are afraid to use plaster, because they believe it will injure the land. There is no doubt but it will injure the land to this extent:—It has the effect of greatly increasing, often doubling the yield of the crop; as it cannot act solely as direct food, it must enable the plants to extract a much larger proportion than they would otherwise do, of the ingredients in the soil necessary to their growth; consequently unless new supplies be added, the soil will become exhausted sooner than if the plaster had not been used and the large crops had not been raised. There is no process known at present, and we never expect to see one discovered, by which the soil can be made to yield up its riches without becoming poor, if we refuse to give back, in the shape of manure, what we have taken from it in our crops. An abundant crop merely proves that the soil contained a large supply of the proper food, and that a greater quantity of this food has been used than in the production of a poor crop. It will be seen then that plastering should not be often repeated on the same soil, unless alternated with good doses of manure.

GARDEN CULTURE.

To the Editors of the Agriculturist.

GENTLEMEN,—

As the season for planting potatoes is approaching, and as the crop has failed with us to a great extent during the two last years, I beg, through the medium of your useful journal, to make a few observations that may prove of some use to the public. I think it necessary to find some substitute for the potato. Many things have been mentioned for that purpose, such as beans, peas, Indian corn, carrots, turnips, onions, and some other kinds of greens and roots. Now, I would beg to recommend, that each farmer who has been in the habit of growing large fields of potatoes, should select one acre of good land, and put on it about twice the usual quantity of old manure, free from the seeds of weeds, then give twice the ordinary quantity of plowing, and thrice the amount of harrowing. Then plant about six times the amount usually planted in the ordinary gardens.—This acre thus cultivated, would do something to supply the loss of the potato crop. Many of these seeds might be planted at a greater distance asunder between the rows, to admit of a man passing through the centre with a hoe, until they would no longer require hoeing.—This course, if carried out, would convince farmers in general, that if they ploughed but one half the land they do, and put on twice the ordinary amount of manure, and twice the ordinary amount of labor, and generally twice the amount of seed, that they will find a much better return for their labor than they do at present. The general opinion as to the mode of planting potatoes to escape rot, is to plant them on dry, sandy, or gravelly, or clay ground, with but little manure, as early as possible, and dig them before the fall rains. This has been found to be the best course in this section of country.

CHAS. P. TREADWELL.

Ottawa District, April 4, 1848.

THE MALDEN AND ANDERDON AGRICULTURAL SOCIETY.

To the Editors of the Agriculturist.

GENTLEMEN,—

Agreeably to a resolution passed at a recent meeting of the above society, I proceed to perform my *task*, and that is, as an officer of the society to write something for the purpose of, I suppose, filling up the columns of the *Agriculturist*, and edifying its readers. Now in the first place gentlemen, I disagree with the resolution altogether, and I am sorry I was not able to attend the meeting when it passed, and oppose it, and had not my friend Mr. Dougall made it public in his communication published in the *Agriculturist* on the 15th of March last, that there was such a resolution on the books of the society, I should not have mentioned it here, for I do consider it a sort of reproach, reflecting something not very creditable on the members of the society, to be compelled to write, as if those that were able and knew any thing that would benefit their fellow labourers in the good cause of agricultural improvement, would not do it, that they really would "hide their light under a bushel," but for that resolution. I think better of our members, and do not like it; it puts me in mind of a passage in one of Sir Walter Scott's Novels, something like this, there was a fight between two Clans, and a famous blacksmith was *hired* to fight on one side, he soon fought his way through, cleaving all opposed to him in the rank, and then resting himself on his claymore, stood looking at the fight, his chief calls on him, but he answers, "no, I was hired to fight, and I have performed my engagement and done my part, had you asked me to fight upon honor, it would have been a different thing." Now it is to be hoped that our worthy friend the