

being destroyed is to be attributed to several distinct causes. We had the last Spring an instance of the same result, from two distinct causes, in two small pieces of wheat, (a quarter of an acre each.) The one was on a clover ley once ploughed in a loamy soil, mixed with limestone gravel; this patch was sheltered by a grove of pines to the south and a fence on the east and west side, and in consequence, being only about four rods wide, it filled with snow, and the wheat was deeply buried nearly all the winter. The result was, that not a score of plants were alive by the middle of April. The other piece was in an open field, exposed to the severest winds and full action of the sun,—was on a sandy loam with clay bottom; the ridges were bare nearly all the winter, only a small portion of snow remaining in the furrows; and in these furrows, ploughed completely down to the hard pan, and consequently very poor, the only living plants were found on the first of May, although all had looked equally well in March.—The wheat was sown on the 26th of August, and was a particularly strong plant in the Fall; it was fed down by sheep in September, and was fully five inches high at the first snow in November.

Our Haldimand Correspondent alludes to the severe frosts, after the heavy and continued rains, and the consequence,—“a thick coating of ice in immediate contact with the plant.” We are not of opinion that this “immediate contact” is in itself material, as, from the depth the frost penetrates the ground, as low, if not a lower temperature, exists beneath the surface, extending much below the roots; and that, unless the concrete mass of ice is of sufficient depth to cover the whole of the plant, its respiratory organs (the leaves,) will continue their functions for the benefit of the plant, but should it occur that the whole is beneath a dense surface, destruction is inevitable. So we find, when, from drifting, a vast body of snow, (several feet in depth sometimes,) accumulates on the side of a fence extending some yards into a field, and should the thawing and freezing before alluded to take place, however that mass may be permeable to the sun’s rays, and however it may contain, *as it does*, a great amount of air within the mass, still, if several successive glazings of ice occur at intervals, the amount of air is not sufficient for healthy action, and death ensues; or should the superincumbent mass press too

heavily on a plant far advanced in its growth, incipient putrefaction takes place, and the whole undergoes decomposition from fermentation.

We incline to the opinion that it is not the frost, in its utmost intensity, which destroys; but that, on the powerful action of solar heat during the opening of the Spring, the roots of the plant lose their hold of the soil, and a sharp frost succeeding, the extreme points of the root fibre are acted upon, and the plant in consequence being upheaved, these fibres become frozen, and are rendered incapable of regaining their hold on the spongy soil, and no longer deriving any nourishment, it dies of inanition.

The question as to whether any precautionary measures can be adopted, is one that should engage the attention of every agriculturist; for our own part, we must confess that we much doubt if such means are within our reach. Loudon states, that in some counties in England, and on soils directly opposite, ploughing in, with a shallow furrow, is adopted, and leaving the land in a comparatively rough state of surface, is considered the best means of ameliorating, if not averting, the calamity; and if such means are of any avail in the comparatively mild climate of England, they ought to be equally beneficial with us, and we firmly believe that, whether on a clay soil, or one of a lighter texture, the harrow is too often needlessly, and indeed injuriously employed to excess, in comminuting the surface to too great an extent; for if the land presented a rougher and nubbly surface, the first covering of snow would not be so easily removed by our violent winds, and a better shelter would be afforded to the tender plant; and in the Spring, when the sun’s influence during the day is very great, a portion of this rough surface, being the first to thaw and dry, would fritter down and form a dressing and support to the coronal roots. The same result, on a lighter soil, whether after a fallow, or green crop, or even on a grass or clover ley, for, in the first instance, the soil, if partaking at all of a loamy nature, will crack and open, and into these openings, the drying upper surface by the wind, and form a fresh supply and covering to the roots, frequently to the exclusion of sharp frosts; and in the case of an old ley, the rough, unbroken fibre of the upturned roots, which always contain a portion of the finer earthy particles, will yield this valuable matter, which will be carried

by the same means into the interstices, and produce the same result. We are, for the above reasons, in favour of being less free in the use of the harrow, but should be obliged by the testimony of some of our readers on the subject.

As to a remedy; of course there can be none after the devastation is completed, but very much may be done by the use of the roller as early as possible in the Spring, which, by pressing home the soil to the roots, brings again within their reach a resuscitating supply of food, and re-invigorates the otherwise failing plant.

We know that, in some soils, before the lower strata is sufficiently thawed to allow the roller to be beneficial, the upper surface is so wet as to cause apprehension of danger from the poaching of the land by the feet of the team; still, we believe it may be employed to advantage much more frequently than is now the case, and we consider it an effectual remedial measure.

ANSWERS TO CORRESPONDENTS.

Our Haldimand Correspondent will have observed that we had proposed for consideration, the subject of the winter killing of Wheat, and will find in our present number some remarks on that subject.

In reply to Mr. C. H. Vernon, on the proper time for sowing Plaster, we would observe: The exact mode of operation of gypsum as a manure, has, we believe, never been satisfactorily ascertained; and till such is the case, experience must be the only guide. Many erroneous opinions have been broached and adhered to for a time, until careful enquiry proved them false. It was supposed to be beneficial in attracting moisture from the atmosphere, and thus nourishing the plant, but this must certainly be a fallacy, as it is too retentive of moisture to yield any inconsiderable portion it may attract, to the roots of the growing plant.

Plaster appears to be most efficacious to the trefoils and peas, and is said to be equally useful in its application to Rye grass, and it may be supposed to be a necessary constituent of their fibre, inasmuch as the ashes of each of these plants are found to contain a portion of this substance; and the reason why its effects are not so visible on other plants, is, most probably, because requiring less in their structure, they draw sufficient from the natural soil. We believe that the only test as to its practical benefits, compara-