es, which are not requisite while the veg- mould is upon it in order to produce a crop. And many who consider them- good farmers may be ignorant also as cause of deterioration in the produce of farms compared with what they formerly d, or the cause of winter killing in their the cause of blight, the cause of the and late frosts, which have for some past affected our crops to a considerable in this and in many other sections of the y. And no doubt they would remain so if kind friend did not draw their attention fact, that these evils arise in a great e from the amount of surface water ey allow to accumulate on their fields, that this system can be alleviated by a ous system of drainage which would not have the effect of drying the soil, but raising the temperature of the surround- tmosphere, the benefits of which must be evident to any thinking mind. But there other matters in connection with, and g directly upon this subject, which I attempt to bring before you in such a r as to enable you to understand them: e first is the fertilizing substances con- in rain water.

water is the source of surplus moisture, at is generally termed surface water, a ority of which is the principal of the evils, which we contend in land requiring ge, but it is said to be a great source ility, not only because it affords the ne y moisture to dissolve the chemical in- ents of the soil, but because it contains valuable fertilizing substances.

n article by Mr. Caird, in the Cyclopœdia griculture, on th erotation of crops, he the surprising effects of a fallow, even d by manure, has received some expla- by the recent discovery of Mr. Barrell,

rain water contains within itself, and ys into the soil fertilizing substances of most importance, equivalent, in a fall of 24 inches per annum, to the quantity monia contained in 200lbs of guano, with of nitrogenous matter besides, all suit- the nutrition of our crops.

being the case then, and taking even average fall of 34 inches of rain per as a criterion, how careful ought farm- heavy clay soils, to be in having them sufficiently porous to enable it to per- through them, instead of running off them, so that these nutritious substances may be extracted from it, by the soil through which it would have to pass to the water bed underneath.

Rain water is also said to contain in solution, air and carbonic acid, with ammonia. The first two ingredients are amongst the most powerful disintegrators of a soil, or in other words they contain the properties required to dissolve the chemical ingredients contained in all soils which, when dissolved, become fertilizers also. By this then we are led to see that the rains bring us not only water for the use of man and beast but also food for our plants. And what I wish to impress most forcibly upon your minds in connection with this matter is, first, that while you should remove by proper drainage, the surplus moisture from your land, you should also take care to conduct it through the soil far enough to extract from it the fertilizing substances it contains. And secondly, see that it is removed to such a depth that it will not prove injurious to the roots of plants, as they require warmth as well at the roots as on the surface in order to enable them to grow with vigor; in short that which constitutes the science of draining, is to have a knowledge of the depth to which drains ought to be laid in order to drain off such water from the water-bed, and not allow it to remain to keep the soil cold.

Evaporation is another great agent which we ought not to lose sight of, in connection with this subject, as it is a most powerful one in connection with drainage, and to it we are indebted for the beneficial effects produced on all soils, but more particularly are its effects remarkable upon soils which are drained, both tending to increase the temperature of the soil during summer, and in consequence to increase the growth of crops, so that they come to maturity earlier and are thereby not so liable to be injured by many of the evils to which late crops are subject. Of the value of these considerations then, let the farmer who has lost more or less of his crops every year make his own estimate. Perhaps he may come to the conclusion that there is more truth in the theory and practice of drainage than he at first imagined and that even in the effects produced by evaporation, he may find a subject of much importance, well worthy of consideration.

Evaporation takes place at any point of temperature from 30° , or even lower, up to 212° , at which water boils. It is increased