books, because but one, or none, of the ten thousand remedies and recipes found in his books apply to the case of his present patient—no, he is progressive, willing to be taught by the experience of the present and the past.

An abstract experiment in medicine, in agriculture or in mechanic arts, whether witnessed, narrated, published in a newspaper or printed in a book, is equally *practical* and far more instructive and useful when published—yet there are many of them very wise and violently practical men, who among farmers, decry book farming and agricultural science, and yet, are very eager and curious to learn how their neighbor has been so much more successful than themselves with a given crop, and when the method of his success is published, and desired information given, they shout book farming! book farming! and plod on again in their old slip-shod ways just as if the farmer alone, while all other classes, the lawyer, the physician, carpenter, architect and engineer, find practical wisdom, aid, science and professional influence in books, journals and professional schools, can learn nothing from the experience of the past, or be enlightened by the more intelligent, enterprising and successful among agriculturists. A little learning is a dangerous thing to the farmer, while other classes outrank him from its ennobling influence—knowledge is power to the weak.

THEORY OF LAND DRAINAGE.

A PLANT, though spreading its roots to a certain distance all around it in the soil, is stationary, and must have its food brought to it. That is the first main fact on which the need depends for a current of water through the land. Water, a powerful solvent, brings substances out of the air which the plant requires as food, and these substances increase its powers as a solvent of other matters in the soil which the plant also needs as food. Moreover, water brings from the air materials of use in the soil in manufacturing food for the use of plants. On all these grounds, then, it is of importance that waters should go through the soil after going through the air. It becomes laden with vegetable food by passing through the air, and it becomes still more laden with vegetable food by passing through the soil, till, when traversing the soil, it passes stationary roots, and enters them, and feeds the plants to which they belong. And there are special reasons why rain water should be induced to pass through the soil rather than lie stagnant on it. In the latter case it is not only useless to the plant, but it is directly mischievous. By evaporation it cools the surface, whereas by percolation through the land it carries the warmer temperature of the surface into the subsoil; and of what value this is to the growth of crops may be gathered from the experience of the last autumn, which has been so productive of growth in our pastures to so unusually late a season—not so much from the increased temperature of the air during November and December, which has been only about two or three degrees above the average of the last thirty years, as from the increased temperature of the soil aud subsoil at one and two feet deep, which has been five and six degrees above the average of the best thirteen years during which observations have been made near London.

And not only is it of importance that the rain, by passing through the land, should carry the temperature of the surface, warmed by the direct rays of the sun, downwards, rather than, by evaporating from the surface, it should carry the heat away and cool the soil; but the percolation rather than the stagnation of the water is desirable, because in the one case air is made to permeate the land, in the other it is excluded. The chemical changes which air produces on and in the soil are desirable, and result, in the preparation of useful food for plants; while, by its exclusion, substances of a poisonous nature, especiallly whero iron and vegetable matter exist together in the soil, are formed.—*Morton's (Eng.) Farmer's Calendar.*

ESSENTIAL TO FERTILITY.

THE value of a soil does not depend so much on its actual, as its available fertility; not so much on the amount of plant food it contains, as in the manner in which it is combined and distributed in the soil. A soil, therefore, may be rich in all the elements of fertility, and yet fail in producing as large crops as it is susceptible of growing, until by tillage the relation of these elements to each other are so changed, and enabled to combine and act on each other as to become more evenly distributed in the soil, and made available for the wants of plants. No amount of manure, for instance, will sufficiently bene-