sis may be made use of to advantage; and having by this means discovered the nature and properties of the soil, the agriculturist may apply the appropriate remedies, and in his course of husbandry, be guided by his knowledge of what *his land is actually capable of producing.**

A more ready method, and one of much more general use, by which an opinion may be formed as to the nature of a soil, is from the trees and *vegetables which we see it produce. The vegetation* will be the *effect*, and indicate the quality of the surface soil in its natural state; while the forest timber, in its size and vigour of growth, is indicative of its strength, and in its species enables us to judge of the soil to a greater depth;—still, neither of these are to be implicitly relied on; some plants may be the produce of seeds accidentally occupying the land, while others labor under the disadvantage of seeking nourishment in a substance which has not been subjected to the fertilizing influence of the air and rain, by being opened and disturbed; this is apparent from the well known *fact, that a field after being* ploughed and then allowed to remain without further tillage, will become covered with herbage not only of a different description from that which it bore before it was disturbed, but also of a much more luxuriant growth. A similar kind of change is apparent in forest land if it be neglected after the timber is removed; the soil again produces trees, but of a different species from those which formerly occupied it. *The poplar, the elm*, or maple, may be seen growing about the decaying roots of the pine or the oak. These effects are caused by the fact, that different portions and properties of the soil are brought into action.—The primitive woods were the produce of the sand, the loam or clay which was nearest the surface, but after this has been mingled with the other portions, and those exposed to the action of the atmosphere, a new substance becomes fertilized, and produces a vegetation according to its properties. Again, it is with trees as it is with plants: each description exhausts a certain portion, that is, principally requires for its growth one component part of the soil, while another kind of tree or plant draws more heavily from another component part; now, where the same kind follows annually; it either, by decomposition, or by means of the falling leaves, returns to the earth the same material of which it continues to exhaust it, and still continues to flourish in the *soil which itself is made to supply and renovate*; but this kind of tree or plant being once destroyed, other portions of the soil which have long lain dormant, send forth their spontaneous vegetation, and a new race of trees or herbage takes the place of the old. In judging then of land before occupying it, the natural growth, whether of trees or herbage, may be advantageously taken into consideration; but it is also important to discover what description of soil lies beneath the surface, and what may be accomplished by a proper mixture of the various parts.

The next thing to be considered is, the best way of turning the soil to good account; that is, the obtaining from it the greatest amount of produce at the least expense. He is the best agriculturist who succeeds best in doing this, and will succeed in *proportion* as he *understands and applies* to practice, scientific principles. The proper course to pursue, will depend upon the nature of the soil to be worked, and in a great measure upon the climate under which it is situated. The climate not only varies with a country or district, but is frequently very different on the adjoining farms, and even in different parts of one. The slopes facing the south, will be found *much warmer, and on them crops will* come to maturity and ripen in a shorter space of time than on the levels or those which incline in another direction. The practical agriculturist knows well how to place his crops so as to take advantage of the varieties of surface and climate on his farm.

The climate most favorable to the agriculturist

* For practical information as to the methods of analysing soils, the reader is referred to Loudon's Encyclopædia. The limits of an essay would not permit of entering into detail on this branch of agricultural science. The following remarks, however, are interesting, and may be useful:—

"There are few cases in which the labour of analytical trials will not be amply repaid by the certainty with which they denote the *best methods of melioration*; and this will particularly happen when the *defect* of composition is found in the proportion of the primitive earths. In supplying organic matter, a temporary food only, is provided for plants, which is in all cases exhausted by a certain number of crops; but when a soil is rendered of the best possible constitution and texture, we have regard to its earthy parts, its fertility may be considered as *permanently established*."—Sec. 2136. And this may be done by supplying such ingredients as have been proved by the analysis to be wanting.