

cultivation, would it be possible to obtain from these concrete data a certain definite harvest? Experience teaches us that the result far from being certain or definite, would be just as uncertain and variable as nature in her changing moods chose to make it. Instead of the soil representing a single constant quantity it really represents innumerable grades of mechanical texture, infinite, varying, chemical conditions and countless organic influences, the simple formations and combinations of which could only be represented ad infinitum. The seed and cultivation in a similar manner represent a function of any number of variable agents. From the manipulation of this multitude of variable crop conditions somewhat uncertain harvests are not to be wondered at.

From the very nature of his circumstances the farmer finds himself, to a greater or less degree, investigating the causes of success or failure. Let us now, as it were, take stock of his mental equipment as an investigator. In the first place he has good powers of observation, his natural surroundings foster this faculty. He sees a certain result, and though he may not always be able to ascertain the real cause, he is at least acute and fairly accurate in observation. The causes assigned for a certain result will depend of course on the nature and extent of his knowledge. If of the old school and versed in the "signs," the cause of any crop failure or success will be some remote agency "in the heavens above, or in the earth beneath, or in the waters under the earth." The moon is with him a wonder worker of marvellous and far-reaching power, affecting everything from the weather to the weaning of the last calf. It is useless to explain to him that it would not be difficult to calculate the exact position and appearance of the moon for any day in the future, and thus by his theory foretell the kind of weather years ahead. He replies that he does not know anything about that, but he knows that the moon does affect the weather for he has seen it. Such a man has often the eye of the artist to observe the wonders of nations and the heart of the poet to appreciate them, but lacks the knowledge and skill of the scientist to investigate and explain them. A second type of agricultural investigator is the younger man of the present generation who laughs at the old folk-lore of his fathers and who believes nothing but what he can see. He reasons from analogies of his own