

our farms so abused through ignorant and careless culture in the last hundred years.

But shall our conceptions of agricultural education end with the soil? Not by any means. Our farmers must have some intelligent conception of many of the principles of physics; he must understand how water moves through the soil; he must know about capillarity; and he must understand how he can control the ebb and flow of the soil water, and how, by changing the physical nature of his soil through the addition of vegetable matter, he can increase its capacity for holding and storing water so as to make it resistant to the sudden droughts which visit our country.

Then he must understand something about how the plant grows and develops, what the roots of the plant are for, and why the plant has different kinds of roots and how he should cultivate the soil, so as to insure the greatest possible development of plant roots with the least waste of energy and time on the part of the plant. To speak of the plant wasting time and energy seems ridiculous to many. Yet if a plant is put in a soil broken six inches deep and the tenacious subsoil meets the tender roots which strike out in search of food, what is the result? A little stalk of corn two feet high, a nubbin weighing an ounce or two, and a disappointed and disheartened farmer. Why? Simply because he does not understand the principles of plant growth, nor the relation of the soil to the development of the plant. Therefore, our farmers must have an intimate knowledge of how plants grow and thrive and how to ameliorate the environment of the plant, so as to insure its greatest development. Then he must have some idea of how to improve plants. He must understand the principles of selection as applied to plants, and the importance of seeking out the characteristic individuals in which the hereditary qualities are firmly established. He should, therefore, become the progenitor of future generations of corn or wheat or whatever grain he may desire to improve.

