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"THE PROFESSION WHICH I HAVE EMBRACED REQUIRES A KNOWLEDGE OF EVERYTHING."

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The Relationship of Plant Physiology to Agriculture.

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The term "plant physiology" suggests to a student beginning its study, as it does to the average man, test tubes, bell jars, water cultures, chemicals, microscopes, text books and scientific terms, none of which at first sight appear to have any part to play in solving the problems of the farmer.

The student of plant physiology, however, soon realizes that all these things do not in themselves constitute the science of plant physiology, but are only means to an end. They are used to study the plant, the living machine, which the farmer endeavors to guide and direct to his own advantage. The man who can best run a tractor or a threshing machine is he who best understands its mechanism and its capabilities under diverse conditions. The same is true in regard to the management of crops. The man who can secure the best results is he who best understands the mechanism, function and response to environment of the delicate living machines with which he works.

Plant physiology is a definite science. It seeks to use the sciences of physics and chemistry to explain the life acti-

vities of plants. The plant physiologist looks for a physical or chemical explanation of every occurrence in the nutrition, growth and reproduction of plants. Thus plant physiology is one of the fundamental sciences of agriculture, seeking to throw light on every operation in the production of all farm crops from seeding to harvesting. We realize how intimately plant physiology



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is connected with agriculture when we stop to consider that it supplies us with a scientific explanation of crop distribution, the necessity for proper drainage and water supply, the preparation of the seed bed and subsequent proper cultivation, the necessity for the application of suitable fertilizers, methods of plant propagation and the essential details for the safe harvesting and storing of crops.

We may know how to do the work essential for the production of certain crops, but unless we know the why and wherefore of what we do we are but machines, without intelligence or appreciation, and as such cannot adjust and regulate our labor to meet the require-

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