Dr. E. W. Allen,\(^1\) in his address as Vice-President of the Agricultural Section, American Association for Advancement of Science, has said that "certain types of work have not been marked by growth, vision and method with the result that conclusions drawn from them are of doubtful scientific value." Dr. Allen believes that "we have not yet learned how to interpret, except superficially, the answer which the soil and the plant give as just what has happened or what the apparent effect is due to, we have not yet learned how to examine a plot of soil so as to determine the changes occurring from time to time or brought about by long continued systems of treatment, or how to connect these changes with the response of the crop in a given season or period. Indeed relatively little study is now given in such experiments to the soil itself, and only to a limited extent are underlying questions suggested by such experiments being intensively studied". A statement of this character coming from Dr. Allen, is worth more than a brief reflection. It calls for a pretty thorough examination of any line of research especially crop production, a subject which deals particularly with climatic and soil factors in their most complex form.* * *

Studies in the field performance of crop varieties or strains have been planned in a sort of haphazard way with no very great thought of the accuracy of the results. It is not at all uncommon to observe data published which are based on two or three years' work and only from a single plot, each season. Cultivation experiments on corn have been long continued and now it is well nigh impossible to draw reliable conclusions because little or nothing is known of the life cycle of the corn plant. A vast amount of money has been spent on corn diseases but today we are handicapped because the soil physicist and biologist were not called in time. The whole crop disease problem seems at times to be so tied up with soil problems that we wonder whether or not the job belongs to the soil research worker as much as the plant pathologist. At any rate, it is quite clear that the soil has a very significant influence on the pathological problem.

A study of our projects in crop production gives us the feeling that the "mere accumulation" of data is the chief end in view. It is well for us to admit that much of our work is of "an elementary nature" and based largely on observation; rarely is there an attempt to get at the fundamental underlying principles having to do with plant growth and plant relationships.