

Inoculations into stem nodes of healthy plants, with a pure culture of *Bact. phaseoli* Erw. Sm. have produced typical signs of the disease. Plants so inoculated also showed the characteristic breaking at the stem node.

Plants inoculated in a similar manner with cultures of species of *Fusarium* and *Rhizoctonia* isolated from platings of this diseased stem tissue, showed no girdling or breaking.

It seems likely that infection results from the washing of bacteria from affected cotyledons or leaves to the axils of the leaves, but the method of entry of this organism is not yet worked out.

A more complete report upon this disease will be given at a later date.

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MICHIGAN AGRICULTURAL EXPERIMENT STATION

### QUOTATIONS

#### SCIENCE AND INDUSTRY

THE important and impressive review of the rise and progress of the organic chemical industry issued by Messrs. Levinstein, Ltd., of Blackley, near Manchester, and of Ellesmere Port, which appeared as a supplement to the *Manchester Guardian* of June 30, marks a welcome development of industrial enterprise. Even the most indifferent and ill-informed reader can not but be made aware, as a result of its perusal, of the importance of the highest facilities for scientific education and training, when in so striking a fashion he is compelled to realize the fruits of it in the enormous industrial advance of Germany in all that pertains to the organic chemical industries, whether it takes the form of artificial dyestuffs, synthetic organic products, or that of chemico-therapeutics. The advent of the war quickly laid bare our serious deficiencies, not to say our utter poverty, in all three departments of chemical manufacture.

In the course of the articles, which have been written by men eminent in their respective fields of chemical science and its applications, the distinction is made absolutely clear as between industries the development of which has mainly been the result of the

adoption of steam power and of mechanical appliances, and those depending upon fundamental researches of a physical and chemical character, such as are, to use the phrase of one of the writers, "built up from the depths," and require, therefore, not merely the energetic business organizer and "scientific management," with a view to output, but the highly trained scientific man capable of appreciating the discoveries of pure science and apt in their application to human needs. In this valuable review of the progress of the many departments of a vital industry—the key, indeed, to the successful prosecution of many allied and dependent industries—it is clearly revealed how remiss the nation has been in a true appreciation of what constitutes the firm foundation of industrial pre-eminence. The fault has lain not so much, as some of the writers seem to indicate, with the colleges and universities as with the industries concerned, which have hitherto offered small salaries and poor prospects to the carefully trained and competent science student; indeed, have looked upon the chemist as a necessary evil, to be avoided if possible.

One of the most important articles is that by Dr. Levinstein, inasmuch as he carefully points out the respective spheres of the university and the works in the effective training of the future industrial chemist. Once those concerned with the successful administration of our industries realize the necessity for encouraging by a liberal payment the work of the efficiently trained chemist there will be no lack in the supply of suitable men. That the nation contains such men has been shown by the fact that the demands of this devastating war for the supply of high explosives have been met with an energy and an efficiency which have surprised our chief enemy.—*Nature*.

#### SCIENTIFIC BOOKS

*The Theory of Measurements.* By LUCIUS TUTTLE, B.A., M.D., Philadelphia, Dr. Lucius Tuttle, Jefferson Medical College. 1916. Pp. xiv + 303. Price \$1.25.

Any one who has read the reports on elemen-