SCIENCE

VOL. LX DECEMBER 26, 1924 No. 1565

CONTENTS

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen Cattell and published every Friday by

THE SCIENCE PRESS

Lancaster, Pa. Garrison, N. Y.

New York City: Grand Central Terminal.

Annual Subscription, $6.00. Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

Entered as second-class matter July 18, 1923, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879.

THE RELATION OF CHEMISTRY TO AGRICULTURE[1]

THE dedication of a new chemical laboratory to the service of agriculture is an event which suggests to the mind a variety of thoughts for reflection. When an institution of learning replaces a structure inadequate to its needs by one that is larger and more modern, it simply illustrates in a very concrete way the change from the old order to the new which is continually taking place in both the material and intellectual worlds. But when, as in the present instance, the dedication of a new laboratory is in commemoration of a former revered teacher and investigator of agricultural chemistry our thoughts are turned backward as well as forward. Almost unconsciously we begin to reflect upon those principles of our science which were transmitted to us by the chemists of previous generations as a basis for our own development and as a foundation for future progress.

The year 1924, which marks the completion and dedication of the Goessmann Chemistry Laboratory of the Massachusetts Agricultural College, is in many respects an anniversary in the history of agricultural chemistry. It was just one hundred years ago that Justus von Liebig established his famous laboratory at Giessen, where he began a series of epoch-making discoveries that changed the course of chemical and agricultural science. Going back another century to 1724, we find an English clergyman, Stephen Hales, in the retirement of his curacy at Teddington actively engaged in experiments to show how much nourishment plants derive from the air—a group of researches which were incorporated three years later in a well-known treatise entitled, "Vegetable Statics." Going back still another hundred years to 1624, we find a Belgian physician, Jean Baptiste van Helmont, in the intervals of his medical practice at Vilvoorden, experimenting with his newly discovered *spiritus sylvester,* or carbon dioxide. This backward glance of three centuries, to the time when New England was first being settled, takes us to the very threshold of agricultural chemistry as a science, for it was van Helmont who by means of quantitative experiments first pointed out the path of future progress and who, although himself unable to become disentangled from the obstacles of mysticism, was yet the earliest to see an opening through the thick forest of speculation in which the human mind had been vainly circling about for a period of two thousand years.

[1] Address given at the dedication of the Goessmann Chemistry Laboratory of the Massachusetts Agricultural College, Amherst, Massachusetts, October 3, 1924.