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ON

AGRICULTURAL INVESTIGATION;

BEING

A LECTURE DELIVERED OCTOBER 27, 1884,

AT

RUTGERS COLLEGE, NEW BRUNSWICK, N.J.

UNDER THE AUSPICES OF

THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION,
THE STATE BOARD OF AGRICULTURE, AND
THE STATE AGRICULTURAL COLLEGE;

BY

JOSEPH HENRY GILBERT, M.A., LL.D., F.R.S.

OF ROTHAMSTED, ENGLAND.

AND SIBTHORPIAN PROFESSOR OF RURAL ECONOMY
IN THE UNIVERSITY OF OXFORD.



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NOTE ON DR. GILBERT'S LECTURE.

It has been announced that Sir John Bennet Lawes, in arranging for the perpetual maintenance of the great work of Rothamsted, makes provision for a representative of that establishment to visit America every other year and lecture at appropriate places.

Dr. Gilbert was in the United States in 1882, and when it was known that he was to come again in 1884, efforts were made to have him attend the fifth annual meeting of the Society for the Promotion of Agricultural Science. As his various engagements unfortunately prevented his being in Philadelphia at the time desired, arrangements were there made to secure lectures from him at other places. He accordingly visited Lansing, Michigan, and New Brunswick, New Jersey, for the purpose, and found appreciative audiences at both places.

The lecture at Rutgers College was under the joint auspices of the New Jersey Agricultural Experiment Station, State Agricultural College, and State Board of Agriculture.

The Society for the Promotion of Agricultural Science, having intended this lecture to be a part of its proceedings at Philadelphia, have asked and obtained permission to first publish the same in this pamphlet. For this purpose the text has been carefully revised and the tables verified by Dr. Gilbert. This kind attention is gratefully acknowledged by

THE EXECUTIVE COMMITTEE.

 NOTE ON THE RE-PRINT IN 1889.

With the exception of a few typographical corrections, the addition of the *Table of Contents* at the top of the next page, and some corresponding cross-titles in the body of the pamphlet, this is strictly a reprint of the Lecture as published in America, as above referred to.

It may be added that, so far as the results relating to the Growth of Wheat are concerned (p. 7 *et seq.*), substantially the same matter formed the basis of a Lecture given at the Royal Agricultural College, Cirencester, on June 16, 1885, so that this may, so far, also stand for the separate publication of that Lecture, which was the first of a series given at Cirencester on the Rothamsted Experiments; the second being on Barley, the third on Root-crops, and the fourth on Potatoes, each of which has already been separately published.

J. H. GILBERT.

LECTURE ON AGRICULTURAL INVESTIGATION.

J. H. GILBERT.

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*Mr. President, Professors and Students of Rutgers College,
and Ladies and Gentlemen:*

I ESTEEM it a high honour and a great responsibility to be called upon to address you on the present occasion ;—an honour because, perhaps, I am not assuming too much in supposing that I owe the invitation to do so to the fact that the joint labours of Sir John Bennet Lawes and myself, in the furtherance of agricultural progress, which have now extended over a period of more than forty-one years, are held in some appreciation in this country ;—and a responsibility, because I know that I have before me representatives of the best agricultural science in the Eastern States.

On hearing from Sir John Lawes, before leaving home, that I might probably be asked to lecture at some Agricultural Institutions in America, I at once decided that it would be inappropriate for me to attempt to discuss, in any detail, American agricultural practices or experiments ; that in these matters I should be a learner rather than a teacher ; and that it would be more suitable for me to give some account of the results obtained at Rothamsted, leaving my audience to decide for themselves, in great measure, how far the facts and the conclusions were applicable to American conditions.

In Germany and France very much good work has been done, both in the laboratory and feeding-shed, during the last thirty years or more ; but in Germany, at any rate, we have it on the authority of Prof. Mærcker of Halle, one of their leading agricultural chemists, that systematic field experiments are almost abandoned in that country. In 1880, Prof. Mærcker stated that belief in their value was greatly diminished, and that by some they were declared to be of no value. It