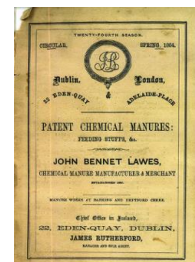


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Remarks on Experiments, and the System of Manuring Best Adapted to Successful Root Growing

James Rutherford

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REMARKS ON EXPERIMENTS.

On the subject of experiments a few remarks have appeared in my former circulars, and I preface these few sentences with the following extract from last year's.

“It would be quite fallacious to conclude, that because in a *single* experiment with, say twelve different manures, *one* exceeded all the others, it was the best of the dozen; as a different season, and a change of soil, or even on the same soil, the result might place No. one five or six steps down the scale. This has been fully verified by many experiments which have come under my notice since then; Peruvian guano and various phosphatic manures are found changing their places up and down the scale, to the extent of from six to eight tons per acre, while in many cases at least, there would be no variation in the quality and composition of the manures used; this anomaly is capable of explanation, but is too formidable a task to enter upon here, and the disturbing elements are familiar enough to many who may glance at these remarks. Some particulars of a few experiments might be introduced as examples of the changes and variations referred to, but this would involve the use of names, which, while agreeable to a few, would be displeasing to many, and tend to prevent that harmony and good feeling which should exist in the trade. When manures are purchased specially for experiment, the seller should be kept in ignorance of the buyer's intention. The importance of this is obvious, from the fact that parties have been known to give small quantities of manure for experiment, greatly exceeding in quality and value, such as would under ordinary circumstances be supplied. The practice so much adhered to in experiments, of using nothing in conjunction with the artificial manures, might be to some extent departed from, with advantage both to agriculturists and manure manufacturers. All artificial fertilizers should be tested in conjunction with a certain portion of farm-yard dung. It is not considered good practice to apply phosphatic manures alone in growing root crops, for although the produce on some soils may be all that could be desired in point of quality and yield, yet the soil is excessively exhausted of certain constituents, the want of which, especially if the roots are not consumed on the field, will seriously affect succeeding crops. In experimenting with ‘turnip manure,’ ‘bone manure,’ ‘superphosphate,’ ‘nitrophosphate,’ or by whatever name they may be called, regard should be had to the composition (as shown by analysis) of manures vended by different makers, as the care taken merely to try equal money value of each, though fair enough *so far*, is not *altogether* a fair test; some phosphatic manures are prepared so as to contain a

certain per-centage of ammonia, but may be deficient in soluble phosphates, as compared with a different manure, which again may not yield so much ammonia. *In manuring the turnip crop, a large proportion of phosphates is all important, and artificial manures which are found to excel in this particular element, but do not yield ammonia except in minute traces, can have this valuable constituent supplied most cheaply by the addition of a certain portion of Peruvian guano, and in using a manure of this composition for experiment, regard still being had to equal money value against others, the farmer is not only proceeding upon the same basis as he would in more extended practice, but is ascertaining more accurately how he can get the greatest result at the smallest cost," and will find, as the result of repeated experiments, that as a manure for the turnip crop, on average medium soil, nothing will equal a combination of farm-yard dung, Peruvian guano, and Superphosphate of lime.* During the autumn and winter months of the past year I visited various parts of the four provinces, and the most careful inquiry and observation amply confirm what I now state; in some cases an abundant yield was seen where the manuring for the growing crop was exclusively Superphosphate; in others, not less favourable results from Guano alone; again, still greater success from Guano and Superphosphate mixed; but the general result gives emphatic testimony in favour of the trio above mentioned: the artificial portion of the mixture gives a much better result in the growing crop than dung alone, and in green cropping, the dung and artificial together leave the soil in a much healthier condition for future operations. It may be further stated that this (modified by particular or exceptional circumstances) is the general practice of nearly all farmers of experience and advanced intelligence, men who, while by no means despising the valued results of scientific research in connexion with agriculture, are guided by the doctrines of chemists, or mere theorists, only in so far as they find them to accord with the practical results of their own observation and experience. It is to be feared that amateurs and inquirers are very much misguided by the class of experiments which generally find their way into print, and are still further astray in so far as they are influenced by the testimonials which are so ingeniously got up and so prodigally and industriously circulated; it is a well known fact, that the largest collection of testimonials ever vended on behalf of any manure, was in connexion with the most worthless article ever offered to the public, and now happily extinct. The great majority of experiments are on much too limited a scale, to ensure accuracy, either in the application of the manures, or in testing the produce, and their ever varying results prove that they are of very little practical value.