INSTRUCTIONS FOR THE ANALYSIS OF SOILS, LIMESTONES, AND MANURES

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BY

JAMES F. W. JOHNSTON

M.A., F.R.SS. L. & E., &c.

Author of "Lectures on Agricultural Chemistry and Geology,"
& "Catechism of Agricultural Chemistry and Geology,"
"The Chemistry of Common Life, &c."

THIRD EDITION

WILLIAM BLACKWOOD AND SONS
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MDCCCLV

PREFACE TO THE THIRD EDITION.

THIS little work is not intended to compete with treatises on chemical analysis, such as those of Rose and Fresenius, which are the text-books of the accomplished analyst. Originally published as an Appendix to my *Lectures on Agricultural Chemistry and Geology*, it has been much in demand also in a separate form. I have, therefore, given to this third edition a more widely practical bearing, by including *limestones, clays, ironstones, manures,* and *natural waters,* among the substances to be analysed. I have briefly explained, also, the principles on which analysis by measure is founded — a method which is susceptible of many simple practical applications. The Instructions are as few and simple as the subject well admits of, and the advancing student will proceed from this little manual to the many larger works which are within his reach.

To the schoolmaster, the farmer, the pharmaceutical chemist and druggist, the youthful student, and to the rural, the training or normal school, and the agricultural laboratory, I offer it as a FIRST HELP TO PRACTICAL AND ECONOMICAL CHEMICAL ANALYSIS. Though small in size, it will materially aid them in those chemical investigations which, in connection with agriculture and the arts, are every day becoming more sought for, and more necessary.

With a view to easy reference, I have added a copious Index.

DURHAM, *March* 1855.

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§ I. WHY A SOIL SHOULD BE ANALYSED.

1°. THE benefits to be derived from the chemical examination and analysis of a soil are by many misunderstood. Some have represented it as the only sure guide to successful cultivation; while others have not scrupled to pronounce the analysis of soils to be entirely useless, and unfitted to lead to any profitable practical result. Both of these extreme parties are in error. For while it is often very difficult, from an analysis alone, to explain either the