

PREFACE.

THE work now laid before the public is a fourth edition of the Author's "Outline of the First Principles of Botany," much extended and, it is hoped, improved. That work was written for the use of students, and entirely for the purpose of enabling them to fix correctly in their minds the more important points which the teacher brings before them in an academical course. When facts are mixed up with extended discussions, and rapidly adverted to, either in a lecture-room or in a written dissertation, the beginner is apt to lose sight of the exact nature of an argument, and is unable to distinguish with certainty the points upon which it is most material for him to fix his attention. That there existed a want of such a work has been sufficiently proved by the many editions the original Outline has passed through, in various European languages: indeed, while the present new edition is in the press, advice has been received of the translation of the work into Hungarian. The propositions which it contained were such as it is of the most indispensable importance for a student to understand; and were all, apparently, deducible from the evidence which had at that time been collected by Botanists. —The wish of the Author was to sketch a slight but accurate outline, the details of which were to be filled up by the reader himself, who, for this purpose, was referred to the Author's more extended Introductions to Botany.

The original "Outline" contained nothing more than the fundamental propositions upon which the principles of Organic and Physiological Botany depend; but, when two editions had been exhausted, the Author was induced, by the favour with which the book had been received, and by its recognized utility, notwithstanding its many defects, to combine with it a

sketch of Systematical Botany, treated in the same manner. He undertook the far more difficult task of reducing to their simplest expression the characters that distinguish the various groups in which plants are classified by modern systematical writers; the object being to diminish, by a very careful and extensive analysis, the difficulties which present themselves to the student of this branch of the subject. The attempt was made in the form of a series of tables, called the "Alliances of Plants;" and it has been satisfactory to the Author to find that this too has been advantageous to students, notwithstanding its extreme conciseness. The work thus altered appeared in 1835, under the title of "Key to Structural, Physiological, and Systematical Botany."

In the edition now offered to students many important improvements have been introduced, without deviating from the original plan of the work. The skill of the wood-engraver has enabled the Author to fill his pages with illustrations, explanatory not only of the technical terms employed in Botany, but also of the Natural Orders of plants. An analysis of the latter, upon the plan of Lamarek, an account of De Candolle's celebrated system of arrangement, into which a large number of wood-cuts are introduced, and some new views relating to natural classification, are added to the matter to be found in previous editions: besides which, the whole of the Structural and Physiological part has been corrected with great care, and made to include all the most important views of modern physiologists, so as to present the reader with a view of the state of Botanical knowledge in these departments in the spring of 1841.

It is hoped that these improvements will render the work what it was originally intended for,—a complete Botanical Note-book,—wherein all the principal topics which the teachers of Botany introduce into their lectures are arranged methodically. The student will naturally look to his instructor or to more extensive works for explanations of those points which in his Note-book are merely adverted to.

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April 1841.*