
From the Preface to the First Edition

This dictionary aims to address the needs of students as well as those of anyone whose profession or interest exposes him or her to books, articles, or scientific and technical papers on environmental topics.

The dictionary is not a textbook and does not pretend to be one. The first decision the editor of a dictionary must make involves defining the word 'dictionary' itself. The book might contain a limited number of fairly long entries, making it rather like an encyclopaedia. Alternatively, it might contain a much larger number of much shorter entries consisting only of definitions. A third approach, which has been adopted here, amounts to a compromise between the two extremes. This dictionary contains many very short entries, sometimes of only two or three words. Other entries are longer, going beyond the simple definition to describe complex biological processes as succinctly as is practicable. The result of the compromise is that the book is able to compress into one volume explanations of well over 5000 terms. These are drawn from ecology, Earth sciences, Earth history, evolution, genetics, plant physiology, biochemistry, cytology, and biogeography. There are brief biographical notes on individuals who have made outstanding contributions to the disciplines relevant to botany, and almost one-third of the entries describe taxonomic groups of seed plants, ferns, algae, mosses, and liverworts, and also fungi, bacteria, and slime moulds.

Entries are fairly extensively cross-referenced to words or expressions that have entries of their own or sometimes, for simplicity, to another part of speech (an adjective cross-referenced to its noun, for example) where the entry is easily recognizable. The cross-references use the customary *see* and *compare* within or at the end of entries, and asterisks before expressions that have entries of their own (e.g. *glycolysis). The cross-references should carry the reader from one entry to another, but, of course, the system involves another compromise. Too many cross-references interrupt the flow of the text, making it more difficult to follow rather than easier. Terms are cross-referenced, therefore, only where the cross-reference may be helpful.

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Preface to the Third Edition

As scientific understanding of genetics has increased and technological advances have reduced the cost and difficulty of sequencing genomes, plant studies have turned increasingly to evolution and phylogeny. The overall direction of plant science has shifted. One consequence is that over the years since the publication of the first edition of this dictionary, access to the genetic relationships among plants has made it possible to revise plant taxonomy, placing it on a firmer evolutionary footing. The need to revise the dictionary for its new edition has given me the opportunity to take account of that development. The entries describing plant families now refer to the orders in which they are placed, and at the same time I have revised the numbers of genera and species in each family in the light of current estimates. The widely used classification developed by the Angiosperm Phylogeny Group is summarized in an appendix, where I have also added a summary of the present classification for Fungi.

In revising the dictionary, I have been helped greatly by Dr Robin Allaby, FLS, FSB, of the University of Warwick, who has scrutinized my revisions and made many of his own. This edition contains many new entries. Some of these relate to plant systematics and others are from molecular biology.

Each of the entries in the second edition has been scrutinized carefully. Many have been modified, often in only small ways, in order to clarify them or bring them up to date.

The revisions do not disguise the fact that the original compilation was the work of a team and would have been impossible without the enthusiastic support and hard work of Mike Kent, Diana Sainsbury, Tim Whitmore, and Robin Allaby. Their work is retained, and if mistakes or omissions have survived, the fault is mine, not theirs.

MICHAEL ALLABY

Preface to the Fourth Edition

In this fourth edition of *A Dictionary of Plant Sciences* I have adjusted the entries on plant taxonomy to make them conform to the classification of the Angiosperm Phylogeny Group (APG). This has necessitated adding a number of new entries for plant families, and moving some of the earlier families that in the APG scheme have been merged. The changes should be self-explanatory, and I have retained the descriptions of the moved families, more or less unchanged, in their new locations. Fully adopting the APG system has also required adding entries for orders that were missing in the third edition. I have also added 10 APG phylogenies for orders, mainly to illustrate the way these are constructed.

I have removed from the main body of the text all the common names of plants, other organisms, and in some cases important products such as timber. These now form an appendix where each is cross-referenced to all the entries in which they are mentioned. I hope this change will make them easier to access, while at the same time removing a large number of possibly untidy one-line entries.

There is a second new appendix, listing about 20 important crop plants with the region and approximate date of their domestication. The table showing the geological time-scale already notes important stages in the evolution of plants.

Many plants yield chemical compounds of medicinal importance. The third edition referred to a few of these; I have added entries describing more.

Plants do not grow in isolation, of course, and the dictionary includes definitions for ecological and soil terms, including soil orders, and reference groups used in the World Reference Base for Soil Resources. There are also entries for fungi, bacteria, oomycetes, and other organisms that clearly are not plants. These are relevant because many of them affect plants.

This edition represents a major revision. I believe it is a significant improvement.

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