From the Preface to the First Edition

Ecology is a relatively new scientific discipline. The study of plants and animals must have begun with the realization that living organisms are of different kinds. In the modern sense, however, the life sciences can trace their origin to ideas that were current in Greece around 500 BC and which derived in part from the much older study of medicine. Aristotle (384–322 BC) emphasized the careful observation and description of organisms that is usually accepted as laying the foundation of biology, although the word 'biology' was not introduced until 1802, by the German G. R. Treviranus (or Trevirons) (1776–1837), in the title of his *Biologie oder die Philosophie der lebenden Natur*. J. B. de Lamarck may have introduced the word independently at about the same time.

The study of the relationships among organisms and between them and their abiotic environment shares some of this history. Aristotle was an accomplished naturalist and ecology is descended partly from natural history. 'Ecology' was also coined first in German (as *ökologie*), in 1866 by Ernst Haeckel, but interest in the new subject was overwhelmed by the upsurge in professional and popular fascination with evolutionary theory that followed the publication of Darwin's *Origin of Species*—oddly enough, itself essentially an ecological theory. It was not until the end of the century that attention returned to the relationship between organisms and their environment and what we understand today as the independent discipline of ecology is barely a century old.

In addition to students who plan to become ecologists or to enter some other branch of the life sciences, ecology is now a component of courses taken by geographers, architects, planners, land managers, industrial chemists, civil engineers, and probably many more. It is for them, and also for those with a less formal interest in the subject, that this dictionary has been compiled.

The general subject embraces concepts, and therefore words and expressions, garnered from a wide range of disciplines. In addition to terms pertaining to environmental pollution and conservation and those derived from ecology itself, together with relevant terms from biogeography, animal behaviour, evolutionary theory, and taxonomy, the dictionary also contains terms from plant and animal physiology, climatology and meteorology, oceanography, hydrology, pedology, glaciology, and geomorphology. It also includes brief biographical notes on a number of individuals who have made important contributions to the discipline.

This Dictionary aims to explain concepts and describe processes in sufficient detail to be helpful to the user. This results in a wide variation in the length of entries and, in some cases, the definition of more than one term within an entry (see, for example, the entry for moraine). Such embedded definitions appear in their alphabetical positions as cross-references. Where an entry uses a term defined in its own right, this is indicated by an asterisk before the term (e.g. *till in the entry for moraine). In some cases, words are cross-referenced to entries defined as different parts of speech (an adjective might be cross-referenced to its noun, for example) if the two are so similar as to allow the appropriate entry to be found easily. Other cross-references use the conventional *see*, *see also*, and *compare*. Cross-references are included within entries only where they might be

helpful, in order to control what might otherwise have developed as a proliferation of cross-references that made entries more difficult to read. The dictionary defines a total of about 5000 terms.

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Preface to the Second Edition

It is now four years since the first edition of this Dictionary appeared. Like all young disciplines, ecology is developing very rapidly, and during these years new terms have been introduced and the meaning of others modified. This has made a new edition desirable and I have taken the opportunity to make many revisions. In doing so I have been greatly helped by Robin Allaby, who has scrutinized my revisions and additions and contributed many of his own.

In particular, the Dictionary now includes a small number of entries pertaining to molecular ecology, a subdiscipline which barely existed at all when the first edition was compiled. Its existence and growing importance mark the widening influence molecular biology exerts throughout the life sciences, based on its power to illuminate evolutionary processes and taxonomic relationships at the most fundamental level. Its necessary inclusion here may also amount to a comment on the modern tendency to group the life sciences under two headings: molecules and cells; and organisms and communities. That ecologists are now required to possess some understanding of genetics demonstrates that, in practice, the two groups are inseparable.

Other entries appearing here for the first time reflect the large amount that has been learned in recent years about ecological relationships and, most especially, about conservation and the management of habitats. Not all these terms are new. Some were omitted from the first edition by oversight or because they did not seem to be in such wide use then as they do now.

All the entries in the first edition have been examined afresh and many have been modified. The modifications are often small, but they bring the definitions up to date, in some cases by providing a little more detail.

Despite the changes, the character of this dictionary was formed with the help of those who contributed to the compilation of the first edition: Robin Allaby, Kenneth Gregory, Tim Whitmore, and Kenneth Mellanby. That, and their contribution to it, remain unaltered.

It is with great sadness that I must record the death of Kenneth Mellanby, just before Christmas, 1993. A leading world authority on environmental pollution as well as ecology, Kenneth was a wise and thoughtful adviser. He was also a dear friend.

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