

## PREFACE

We selected the terms Ecology, Evolution and Systematics for our title because we felt they would indicate three focal points within the overall coverage of this dictionary to potential users. Biology, in common with the whole of Science is structured into a plethora of sub-disciplines exhibiting varying degrees of specialization, that often tend to inhibit or obscure a broadly based understanding. Our three major disciplines are in practice integrated by large areas of overlap into a modern biological science that has been called Evolutionary Biology, but might equally well be viewed as contemporary Natural History. The special emphasis is placed on the dynamics of the biosphere – change through time. Ecologists look especially at populations, communities, and their interrelationships with the physical environment. Evolutionists look at organisms and groups but explore in particular the mechanisms that produce or influence variation, adaptation and change. The trend towards more frequent intercourse between workers from traditionally separate disciplines in search of a better understanding of the causal explanations for observed biological phenomena has brought ecological and evolutionary studies into closer contact. The effect on the student or researcher is to open up a vast new literature with the inevitable plague of specialized terms which although relevant may be quite unfamiliar to the reader as they have their origins in other disciplines. Just such a situation exists in Natural History and provided the initial impetus for the compilation of an index of terms that led eventually to the preparation of this book. The ultimate choice of which terms to include and which to omit was our own, founded on personal research experience as well as on advice from colleagues at the British Museum (Natural History). There are few natural discontinuities in biology or biological

terminology so our decisions concerning peripheral material were necessarily subjective. Our aim throughout has been to provide short working definitions of those terms that come within the routine reading matter of ecologists, taxonomists and the like.

The language of taxonomy, or systematics, has been given thorough coverage because, despite its reputation as a specialized cul-de-sac, it is a subject that underpins many ecological and evolutionary studies. Indeed, many ecologists at first disinterested in taxonomic practice have found themselves reluctantly recruited into the discipline when confounded by the twin obstacles of identification and species recognition. The application of statistics to ecology has also been covered – with biology becoming an ever more rigorous science a basic understanding of statistics is a necessity.

Special attention has been given to principles, processes and classifications. We have deliberately omitted basic morphological and anatomical terms since these can be tracked down fairly easily in relevant descriptive textbooks and, more to the point perhaps, any such list of structural terminology would be so immense as to swamp the present text and expand the work into several volumes. Individual entries are brief, with the emphasis on a working definition rather than an encyclopaedic or discursive essay. We aim to provide an indication of modern usage and have not attempted to impose a rigid definition where one does not exist as this can often be quite misleading. Where terms have been employed in several subtly different ways by different authors we have opted for a definition closest to the original use or to the etymological derivation of the word. The latter usually enables a term to be understood even when read in a context not covered directly by our source material. Where substantial divergences in the use of

a term exist we have given separate definitions. We have no desire to stimulate the introduction of unnecessary new terms which although they may serve to classify or qualify particular events or assemblages can actually hinder efficient communication. As we have become increasingly aware the literature already carries a heavy burden of redundant words, synonyms, partial synonyms and cumbersome neologisms. Such terminological monstrosities as bathyplanktohyponeston do little to facilitate communication.

The final section of the book is devoted to

21 Appendices in the form of maps, diagrams, tables and lists that have been used to summarize groups of associated terms or concepts.

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