

Preface

During the last three years, there has been an explosive growth in the number of books and papers that have appeared on the use of chemical compounds as taxonomic characters. It can be confidently asserted that comparative phytochemistry, dealing as it does with both the distribution and biogenesis of chemical substances in plants, is now well established and has proved to be useful not only as an addition to the armoury of plant taxonomists, but also by indicating interesting taxa and biosynthetic sequences to natural product chemists.

This conclusion is reinforced by the fact that in the last year both the International Union of Pure and Applied Chemistry and the International Association for Plant Taxonomy have set up official committees on chemical plant taxonomy.

This book can therefore be regarded not as an advertisement for a new branch of science, but as a necessary up-to-date report showing the present state of the art, the progress made in the field in the last year or so, and providing, moreover, a useful source book both to botanists and to chemists for years to come.

What of the future? The interesting phylogenetic implications of recent work on the differences in amino acid sequences in haemoglobin from different animal species indicates that similar investigations on plant proteins and on base-sequences in plant nucleic acids will undoubtedly be equally rewarding. However, until suitable techniques have been developed for such work, we may expect that the results of greatest interest will come from biosynthetic investigations which should give a better insight into the interrelationships between compounds, and help to answer questions about parallelism and diversification, convergence and divergence as applied to chemical characters.

Almost equal importance can be attached to work that leads to an understanding of the biological function of the so-called secondary plant products and the relationship between such functions and other characters of taxonomic importance. It is gratifying to note that, as can be seen from the contributions in this book, such problems are already being tackled with vigour.

The chapters in this book are based on papers presented at a meeting of the Phytochemical Group in Cambridge in April 1965, which was generously supported by a grant from the Scientific Affairs Division of NATO, and all those interested in chemotaxonomy must be grateful for the continued support both organizations have so readily given over the last few years.

As editor, I am also especially grateful to the contributors who have all responded generously and promptly to the various demands I made on them, and I hope they will forgive me for any faults in their chapters due to an oversight on my part. I would also like to record my debt to Professor Holger Erdtman for his continued wise guidance and inspiration, and, finally, I wish to thank the staff of Academic Press for their invaluable assistance in preparing the book for publication.