

The Total Synthesis of Natural Products

VOLUME 4

Edited by

John ApSimon

*Department of Chemistry
Carleton University, Ottawa*

A WILEY-INTERSCIENCE PUBLICATION

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Preface

Throughout the history of organic chemistry, we find that the study of natural products frequently has provided the impetus for great advances. This is certainly true in total synthesis, where the desire to construct intricate and complex molecules has led to the demonstration of the organic chemist's utmost ingenuity in the design of routes using established reactions or in the production of new methods in order to achieve a specific transformation.

These volumes draw together the reported total syntheses of various groups of natural products and commentary on the strategy involved with particular emphasis on any stereochemical control. No such compilation exists at present, and we hope that these books will act as a definitive source book of the successful synthetic approaches reported to date. As such, it will find use not only with the synthetic organic chemist but also perhaps with the organic chemist in general and the biochemist in his specific area of interest.

One of the most promising areas for the future development of organic chemistry is synthesis. The lessons learned from the synthetic challenges presented by various natural products can serve as a basis for this ever-developing area. It is hoped that these books will act as an inspiration for future challenges and outline the development of thought and concept in the area of organic synthesis.

The project started modestly with an experiment in literature searching by a group of graduate students about thirteen years ago. Each student prepared a summary in equation form of the reported total syntheses of various groups of natural products. It was my intention to collate this material and possibly publish it. During a sabbatical leave in Strasbourg in 1968-69, I attempted to prepare a manuscript, but it soon became apparent that the task would take many years and I wanted to enjoy some of the other benefits of a sabbatical leave. Several colleagues suggested that the value of such a collection would be enhanced by commentary. The only way to encompass the amount of data

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collected and the inclusion of some words was to persuade experts in the various areas to contribute.

Volume 1 presented six chapters describing the total synthesis of a wide variety of natural products. The subject matter of Volume 2 was somewhat more related, being a description of some terpenoid and steroid syntheses. Volume 3 concentrated on alkaloid synthesis and appeared in 1977. The present volume contains three chapters on new areas of synthetic endeavor and two more encompassing the progress in synthetic work in the areas of monoterpenes and prostaglandins since the appearance of Volume 1.

It is intended that Volume 5 of this series will contain predominantly updating chapters in order that this series may continue to be of timely use to those with interests in synthetic chemistry.

John ApSimon

*Ottawa, Canada
March 1981*

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THE TOTAL SYNTHESIS
OF NATURAL PRODUCTS

The Synthesis of Insect Pheromones

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