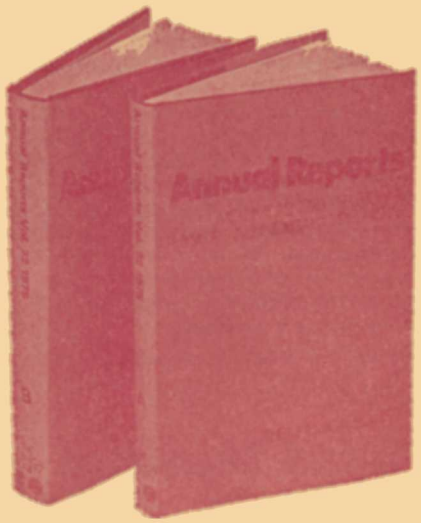
CS Publications News

ANNUAL REPORTS



Annual Reports on the Progress of Chemistry Vol. 73 Part B

Senior Reporters:
Professor P. G. Sammes, *City University, London*
Dr. J. H. P. Utley, *Queen Mary College, London*

"The present volume covers all of organic chemistry in twenty chapters, ranging from physical methods and techniques to enzyme mechanisms. The large group of reporters who made this volume possible are to be thanked for so competently digesting the enormous amount of material before them and presenting it in a readable form with restrained but helpful critical evaluation. It is certainly a welcome aid for keeping up, not with one's own specialty, but with organic chemistry as a whole."—*Journal of the American Chemical Society reviewing Vol. 71, 1974*

Volume 73 is again divided into two parts.

Part B covers organic chemistry as follows:
Introduction; Physical Methods and Techniques; Theoretical Chemistry; Reaction Mechanisms; Arynes, Carbenes, Nitrenes, and Related Species; Organometallic Chemistry; Electro-organic Chemistry; Photochemistry; Aliphatic Compounds; Aromatic Compounds; Heterocyclic Chemistry; Alicyclic Chemistry; Synthetic Methods; Biological Chemistry.

Part B (Organic Chemistry)
Clothbound 472pp 8¾″ × 5⅝″ 0 85186 091 5 £15·00 (CS Members £5·00)

ACS SYMPOSIA No. 38

Electrochemical Studies of Biological Systems

Edited by Donald T. Sawyer

During the past decade electrochemical methods have been used increasingly to characterize biological systems. Organic, inorganic, and biological chemists have found that electrochemical methods are uniquely effective for determining the stoicheiometries, thermodynamics, and kinetics of electron-transfer reactions.

Although several chapters in this volume cover the development of improved electrochemical techniques and instrumentation, the major emphasis is on the study of the redox properties of model compounds for biological systems. Specifically, the 12 chapters cover vitamin B_{12} and related cobalamins, cytochrome c, ligand structural modifications, metalloporphyrins, N-bridged dimers, reduction of nitogenase substrates, redox model for mitochondrial superoxide dismutase, interfacial behaviour of purines, mediator-titrants, rotating ring disc enzyme electrode, model for a mammalian heart, and analysis of NTA and EDTA in water samples.

Clothbound 224pp 9¼″ × 6¾″ 0 8412 0361 X £12·00

ACS SYMPOSIA No. 39

Synthetic Methods for Carbohydrates

Edited by Hassan S. El Khadem

This book is an investigation of new synthetic methods for producing the naturally occurring substances responsible for protecting man and animal against disease.

A problem in synthesizing naturally occurring antibiotics such as C-nucleosides, lies in the nature of the link between the heterocyclic systems—i.e., a solid carbon–carbon bond not subject to hydrolytic or enzymological cleavage. To circumvent its lack of reactivity, one must first create a stable intermediate in which the desired linkage occurs. Several studies in this volume are concerned with this type of approach. Other potential paths include original studies with the chemistry of D-gucal. Also, the introduction of heteroatoms other than oxygen into the sugar ring has had some favourable effects, especially with sulphur as the heteroatom. In completing the coverage of the difficult synthesis of chemicals which are integral parts of the body's defence mechanism, the actual synthesis of biogenic amines and serologically active glycolipids is described.

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ACS SYMPOSIA

No. 30 Cancer Chemotherapy

Edited by Alan C. Sartorelli

During the past decade, the use of chemical agents in the treatment of disseminated cancer of man has resulted in a significant cure rate.

Five papers represent a sampling of the current approaches to development of antitumour drugs. The α-(N)-heterocyclic carboxaldehyde thiosemicarbazones inhibit both synthesis of DNA and cell replication. Adriamycin has a wide spectrum of anticancer activity, particularly on solid tumours. But, the rate-limiting toxicity of this drug is still a challenge to medicinal chemists. The alkylating agents, an old, highly active group, are studied for their anticipated higher reducing potential of hypoxic cells of solid tumours. Value of the nitrosoureas lies in their possession of both alkylating and carbamoylating properties.

Clothbound 126pp 9¼″×6¾″ 0 8412 0336 9 £11·50

No 32. Industrial and Laboratory Pyrolyses

Edited by Lyle F. Albright and Billy L. Crynes

Several developments within the last few years have emphasized the need to better understand the chemistry of pyrolysis and thermal cracking processes themselves.

Increased attention is being given to conservation of energy during pyrolysis, and consideration is being given to the use of non-petroleum feedstocks.

Four groups of papers describe the following: the chemistry and mechanism of pyrolysis of various light hydrocarbons; design considerations for commercial plants; pilot plants and commercial units for pyrolysis of various hydrocarbons; and pyrolyses of various compounds present in coal-derived liquids, oil shale, waste products, and miscellaneous organic materials.

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No. 33 Controlled Release Polymeric Formulations

Edited by D. R. Paul and F. W. Harris

This state-of-the-art summary emphasizes the role of the polymer as a rate controlling device, container, or carrier for the agent to be released.

In conventional methods a substance is administered to a system by nonspecific, periodic application. This method results in a cyclic sharp rise and gradual fall in dosage and may even produce undesired side effects either to the target area of the system or the immediate environment. Through the controlled release method the active agent is administered at a rate that maintains its concentration within optimum limits and directs the agent to the target area.

As well as covering medical applications, a number of papers discuss the control of pests such as snails, weeds, marine fouling organisms, roaches, and flies.

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No. 35 Actinides in the Environment

Edited by Arnold M. Friedman

This compilation, the first of its kind, presents the current state of knowledge about the behaviour of actinides, especially plutonium and americium, in our environment.

Environmentalists, nuclear power planners, and nuclear waste planners will value this timely and unprecedented collection of actinide research, delivered in a brief, direct fashion by experts from the world's most advanced nuclear laboratories.

They provide a comprehensive look at biological pathways and chemical reactions of the actinides, including an excellent nine-point summary of actinide behaviour in the environment. Furthermore, interesting aspects of waste management and geological storage are studied, and the migration of actinides in rocks, soils, ground water, and biosystems is investigated.

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No. 36 Clinical Chemistry

Edited by Donald T. Forman and Richard W. Mattoon

This volume presents topics that have a clinical chemical basis but which are also of interest to specialists in such clinical areas as pediatrics, endocrinology, and hematology. Individual chapters delve into the problems of the etiology of disease and diagnosis as well as describe technical advances which can be applied more practically in the near future than they are now.

Specifically, 10 chapters cover separation and characterization of hemoglobins, measurement of calciotropic hormones, competitive protein binding assays, prenatal detection of genetic diseases, neonatology blood gas abnormalities, clinical enzymology, modern liquid chromatography, trace metals in biological fluids, and drug interference in laboratory testing.

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No. 37 Pesticide Chemistry in the 20th Century

Edited by Jack R. Plimmer

This book surveys pesticide chemistry over the past 75 years, its contents contain:

Chlorinated Insecticides—Retrospect and Prospect; The Progression of Resistance Mechanisms. *Herbicides*: Development of the American Herbicide Industry; Mode of Action; The Environmental Chemistry of Herbicides. *Fungicides*: Fungicides—Past, Present, and Future; Metallo-Organic Fungicides; The Sulphenimide Fungicides; The Development of Agricultural Antibiotics. *Instant Growth and Behaviour Regulators*: Hormonal Control of Insect Development; Insect Pheromones; Benzoylphenyl Ureas; Fourth Generation Insecticides. *Plant Regulators*: Post Harvest Responses; Growth Regulators in Flowering and Fruit Development.

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