ISSN 0300 ~ 922X

No.12 December 1989 and Index



ROYAL SOCIETY OF CHEMISTRY

Perkin Transactions 1

A Journal of Organic and Bio-Organic Chemistry

JOURNAL OF THE CHEMICAL SOCIETY

PAGES 2145–2518 AND INDEX

Officers and Council of the Perkin Division 1989–90

President Professor C. J. M. Stirling

Professor J. E. Baldwin Professor A. R. Battersby

Vice Presidents Professor G. Pattenden Professor R. Ramage

Ordinary Members

Dr. G. M. Blackburn Dr. N. S. Crossley Dr. P. M. Cullis Dr. S. G. Davies Dr J. Dixon Professor D. M. X. Donnelly Professor S. V. Ley Professor J. MacMillan Professor M. I. Page Professor R. J. Stoodley

Honorary Secretary/Treasurer Dr. J. S. Davies

Chairman of the Publications & Information Board Miss A. R. Haygarth Jackson

Chairman of Journals Management Committee Professor H. M. Frey

Perkin Editorial Board Professor S. M. Roberts (Chairman) Dr. D. Bethell Dr. R. F. Newton Professor D. H. G. Crout Dr. H. S. Rzepa Dr. S. G. Davies Dr. J. K. M. Sanders Professor A. Williams

Manager Journals Dr. A. D. McNaught Editorial Manager, Perkin Transactions Dr. S. R. Buxton Editor, Perkin 1 Transactions Dr. E. R. Smith Dr. S. R. Buxton Assistant Editors

Assistant Editors Dr. K. D. Allott Miss H. A. Boyle

Mr. D. Bradley Mr. P. M. Rees Mr. A. Wilkinson

Editorial Office

The Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 4WF, U.K. Telephone 0223 420066 Fax 0223 423623 Telex 818293 ROYAL

Perkin Transactions 1 (ISSN 0300-922X) is published monthly by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 4WF, England. 1989 Annual Subscription Price U.K. £366.00, Rest of World £421.00, U.S.A. \$842.00. Change of address and orders with payment in advance to The Royal Society of Chemistry, The Distribution Centre, Blackhorse Road, Letchworth, Herts SG6 1HN, England. Air Freight and mailing in the U.S. by Publications Expediting Inc., 200 Meacham Avenue, Elmont, New York 11003. U.S. Postmaster: send address changes to Perkin Transactions 1, Publications Expediting Inc., 200 Meacham Avenue, Elmont, New York 11003. Second class postage paid at Jamaica, New York 11431. All other despatches outside the U.K. by Bulk Airmail within Europe and Accelerated Surface Post outside Europe. PRINTED IN THE U.K.

Information for Authors

Full details of how to submit material for publication in *Perkin Transactions* 1 and 2 are given in Instructions for Authors (*J. Chem. Soc., Perkin Trans.* 1 or 2, 1989, Issue 1).

The subject matter of *Perkin Transactions 1* embraces all aspects of organic and bio-organic chemistry. These include synthetic organic chemistry of all types, organometallic chemistry, chemistry and biosynthesis of natural products, the relationship between molecular structure and biological activity, the chemistry of polymers and biological macromolecules, and medicinal and agricultural chemistry where there is originality in the science.

Perkin Transactions 2 deals with the physicochemical aspects of organic, organometallic and bio-organic chemistry including kinetic, mechanistic, structural, spectroscopic, and theoretical studies. Such topics include structure-activity relationships and physical aspects of biological processes and of the study of polymers and biological macromolecules.

All contributions are judged on the criteria of (i) originality and quality of scientific content and (ii) appropriateness of the length to the content of new science. Short papers are acceptable provided that they constitute full reports of completed pieces of work and are not fragments of more extensive studies. Preliminary accounts of novel and significant work of exceptional specialist interest, in any branch of organic chemistry, may be published as Communications in *Perkin Transactions 1*.

Manuscripts (three copies typed in double spacing) should be addressed to:

The Manager, Journals, Royal Society of Chemistry, Thomas Graham House, Science Park,

Milton Road,

CAMBRIDGE CB4 4WF, U.K.

Attention should be paid to the use of standard methods of literature citation, IUPAC nomenclature recommendations, and SI units and symbols.

All queries relating to the presentation and submission of papers, and any correspondence regarding accepted papers and proofs, should be directed to the Editor, *Perkin Transactions 1* or 2 (address as above). Members of the Perkin Editorial Board (who may be contacted directly or *via* the Editorial Office) would welcome comments, suggestions, and advice on general policy matters concerning *Perkin Transactions*.

Fifty reprints of each published contribution are supplied free of charge, and further copies can be purchased.

© The Royal Society of Chemistry, 1989. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photographic, recording, or otherwise, without the prior permission of the publishers.