#### JOURNAL OF THE CHEMICAL SOCIETY

### **Chemical Communications**

Number 15 1984

#### **CONTENTS**

- 953 Origins of Conjugated Triene Fatty Acids. The Biosynthesis of Calendic Acid by Calendula Officinalis Leslie Crombie, Stephen J. Holloway
- 955 Dialkylaminophosphines R. Bruee King, Narayan D. Sadanani
- 956 Chiral Acetate Enolate Equivalent for the Synthesis of β-Hydroxy Acids Stephen G. Davies, Isabelle M. Dordor, Peter Warner
- 958 A Tris-dinitrogen Complex. Preparation and Crystal Structure of mer-[Mo(N<sub>2</sub>)<sub>3</sub>(PPr<sup>n</sup><sub>2</sub>Ph)<sub>3</sub>] Stewart N. Anderson, David L. Hughes, Raymond L. Richards
- 959 Methylenecyclopentane Annulation: A Synthesis of the Sesquiterpenoid (±)-Pentalenene Edward Piers, Veranja Karunaratne
- 961 Sub-nanosecond Processes in the Quenching of a Copper Phthalocyanine Dye Adsorbed on TiO<sub>2</sub> Alexander D. Kirk, Cooper H. Langford, Christine Saint Joly, Rene Lesage, Devendra K. Sharma
- 962 Structures of the Catalysts derived from Rh-Co Bimetallic Carbonyls supported on γ-Al<sub>2</sub>O<sub>3</sub>: Study of Rh-K EXAFS Toshihiko Yokoyama, Kunihiko Yamazaki, Nobuhiro Kosugi, Haruo Kuroda, Masaru Ichikawa, Takakazu Fukushima
- 964 The Mechanism of Metal-promoted 1,3-Sulphur Shifts involving the Apparent Insertion of Carbon Monoxide into a Carbon-Sulphur Bond Jack L. Davidson, Laurence Carlton
- 965 α-Alkenylation of β-Dicarbonyl Compounds with 'Alk-1-enyl-lead Triacetates' Mark G. Moloney, John T. Pinhey
- 966 E.s.r. Evidence for the Multiplicity of Side-chain Oxidation Pathways in the Acid-catalysed Decomposition of Substituted Hydroxycyclohexadienyl Radicals Michael J. Davies, Bruce C. Gilbert, Cedric W. McCleland, C. Barry Thomas, John Young
- 968 Acceleration of the Reductive Elimination Step in Pd-Catalysed Allylic Alkylation by Allylic Substrates Hideo Kurosawa, Mitsuhiro Emoto, Akira Urabe
- 969 Fast Atom Bombardment (F.A.B.) Mass Spectrometry; Mechanism of Ionisation Edward Clayton, Anthony J. C. Wakefield
- 970 Synthesis of a 7-Oxo-1,4-diazabicyclo[3,2.0]hept-3-ene-2-carboxylate (Δ¹-Azapenem) and a Related 3,7-Dioxo-1,4-diazabicyclo[3,2.0]heptane-2-carboxylate, a Fused β,γ-Lactam Graham Johnson, Peter M. Rees, Barry C. Ross
- 972 Fast Time-resolved Infrared Spectroscopy of Organometallic Intermediates: Detection of [(η<sup>5</sup>-C<sub>5</sub>H<sub>5</sub>)Fe(CO)<sub>2</sub>] and [(η<sup>5</sup>-C<sub>5</sub>H<sub>5</sub>)Fe(μ-CO)<sub>3</sub>Fe(η<sup>5</sup>-C<sub>5</sub>H<sub>5</sub>)] in Room-temperature Solution Barry D. Moore, Michael B. Simpson, Martyn Poliakoff, James J. Turner
- 974 The Isolation and Crystal Structure of {Li·(H<sub>2</sub>O)<sub>2</sub>·[O=P(NMe<sub>2</sub>)<sub>3</sub>]}<sub>2</sub><sup>2</sup>+·2Cl<sup>-</sup>: a (LiO)<sub>2</sub> Ring Compound with Bridging Neutral Oxygen (Hexamethylphosphoramide) Ligands **Donald Barr, William Clegg, Robert E. Mulvey, Ronald Snaith**
- 976 Surface Selectivity in the Direct Electrochemistry of Redox Proteins. Contrasting Behaviour at Edge and Basal Planes of Graphite Fraser A. Armstrong, H. Allen O. Hill, B. Nigel Oliver
- 977 Biosynthesis of Asteltoxin by Cultures of *Emericella variecolor*. The Role of Propionate in the Biosynthesis and Evidence for a 1,2-Bond Migration in the Formation of the Bistetrahydrofuran Moiety **Pieter S. Steyn, Robert Vleggaar**
- 979 The Formation of a Novel Quinquedentate N<sub>4</sub>O Ligand by Dioxygen Oxidation of trans-(RSSR)-[CoCl<sub>2</sub>(teta)]ClO<sub>4</sub> Donald A. House, Michelle Harnett, Ward T. Robinson, M. Claire Couldwell
- 980 Conversion of Aryl(trichlorovinyl)nickel(II) Complexes into Isomeric Mono-organonickel(II) Complexes Masanori Wada, Koichi Nishiwaki, Makoto Kumazoe
- 981 p-t-Butyl-calix[4]arene Tetracarboxylic Acid. A Water Soluble Calixarene in a Cone Structure Arturo Arduini, Andrea Pochini, Sara Reverberi, Rocco Ungaro
- 982 Ionic and Metallic Clusters in Zeolites Peter P. Edwards, Martin R. Harrison, Jacek Klinowski, Subramanian Ramdas, John M. Thomas, David C. Johnson, Catherine J. Page
- 984 Stepwise Ring Closure in Penicillin Biosynthesis. Initial β-Lactam Formation

  E. Moroney, Leslie D. Field, Hong-Hoi Ting
- 987 Cycloaddition Reactions of Allyliron Complexes: Synthesis of Cyclopentanoid Derivatives such as (±)-Sarkomycin Raymond Baker, Rona B. Keen, Michael D. Morris, Ralph W. Turner
- 988 The Reaction between Bromine and (E)-1-Trimethylsilylcyclo-octene Dashyant Dhanak, Colin B. Reese, David E. Williams
- 989 Synthesis of (±)-Clavularin B: Unambiguous Structure Determination Rudolf Urech
- 990 Alkoxide Accelerated 1,5-Sigmatropy of Alkyl, Vinyl, Aryl, and Cyclopropyl Groups Peter J. Battye, David W. Jones

i

- 992 An η²-Allene Complex of Rhenium Formed from an Alkyne: X-Ray Structure of [ReCl(η²-H<sub>2</sub>C-C=CHPh)-(Ph<sub>2</sub>PCH<sub>2</sub>CH<sub>2</sub>PPh<sub>2</sub>)<sub>2</sub> David L. Hughes, Armando J. L. Pombeiro, Christopher J. Pickett, Raymond L. Richards
- 993 The Detection of the New Molecule Prop-2-ynylideneamine, H-C=C-CH=NH, by Microwave Spectroscopy Harold W. Kroto, Don McNaughton, Osman I. Osman
- 994 Selective Fischer-Tropsch Synthesis of Hydrocarbons over Ruthenium Supported on Silica having a Very Sharp Pore Size Distribution in the Micropore Region Tadahiro Wakui, Tadahiko Handa
- 996 An N.M.R. Study of FeH(dmpe)<sub>2</sub>(BH<sub>4</sub>) [dmpe = 1,2-Bis(dimethylphosphino)ethane]-an Iron Complex containing a Monodentate Borohydride Ligand Murray V. Baker, Leslie D. Field
- 998 Synthesis of 1,2-Bis(1,4,7,10-tetra-azadodecanyl)ethane, a Double-ring Fully Saturated Macrocycle containing 12-Membered Tetra-aza Subunits Mario Ciampolini, Mauro Micheloni, Nicoletta Nardi, Francesco Vizza, Armando Buttafava, Luigi Fabbrizzi, Angelo Perotti
- Aromatic Hydroxylation: the Direct Oxidation of C-Pd into C-OPd Amiva K. Mahapatra, Debkumar Bandyopadhyay, Pinaki Bandyopadhyay, Animesh Chakravorty
- 1000 Electrophilic Addition of an Osmium-bound Chloromethylene Ligand to the Benzene Ring of a Triphenylphosphine Ligand. Synthesis of Metallacyclic and Metallabicyclic Complexes. X-Ray Structures of [OsCl(CO)<sub>2</sub>(o-PPh<sub>2</sub>C<sub>6</sub>H<sub>4</sub>CHCl)(PPh<sub>3</sub>)] and [OsCl(CO)<sub>2</sub>(o-PPh<sub>2</sub>C<sub>6</sub>H<sub>4</sub>CHC<sub>6</sub>H<sub>4</sub>PPh<sub>2</sub>-o)] Simon V. Hoskins, Clifton E. F. Rickard, Warren R. Roper
- 1002 An \( \alpha\)-Diazoalkylosmium Complex as a Carbyne-complex Precursor. Synthesis and X-Ray Crystal Structure of OsCI(I)(NO)(PPh<sub>2</sub>C<sub>6</sub>H<sub>4</sub>CHCO<sub>2</sub>Et)(PPh<sub>3</sub>)], the Product of an Intramolecular Carbyne Insertion Reaction Mark A. Gallop, Tony C. Jones, Clifton E. F. Rickard, Warren R. Roper
- 1004 The threo-Selective Reaction of Allenic Organometallic Compounds with Imines Yoshinori Yamamoto, Wataru Ito, Kazuhiro Maruyama
- 1005 Biosynthesis of 6-Methylsalicylic Acid; the Combined Use of Mono- and Tri-deuteriated Acetate Precursors to investigate the Degree of Stereocontrol in the Aromatisation Sequence Chris Abell, James Staunton
- 1007 1,4-Fragmentation of γ-Tributylstannyl Alcohols by a Hypervalent Organoiodine Compound: a New Synthesis of Unsaturated Carbonyl Compounds Masahito Ochiai, Tatsuzo Ukita, Yoshimitsu Nagao, Eiichi Fujita
- 1008 Synthesis of Disodium Prephenate Robert Ramage, Angus M. MacLeod
- 1010 Thiophilic Reaction of 2,4,6-Tri-t-butylphenyl-lithium with Carbon Disulphide: Umpolung of the Reactivity of Carbon Disulphide Renji Okazaki, Takuji Fujii, Naoki Inamoto
- 1011 Synthetic Approaches to Pederin. A Synthesis of (±)-Benzoylpedamide Philip Kocienski, Timothy M. Willson
- 1012 Saturation Transfer in N.M.R. via Low-amplitude Spinning Sidebands Eirian H. Curzon, Oliver W. Howarth
- 1014 Inhibition of Resonance Delocalisation of Charge by Strong Hydrogen Bonding James H. Clark, David G. Cork 1015 Conductive Composites from Poly(vinyl chloride) and Polypyrrole Marco-A. De Paoli, Robert J. Waltman, Arturo F. Diaz, Joachim Bargon
- 1016 Diastereoselective Asymmetric Allylation of Chiral α-Keto-amides with Allyltrimethylsilane. Preparation of Protected Homoallylic Alcohols Kenso Soai, Miyuki Ishizaki
- 1017 Active Site Chemistry of Hemerythrin Graeme D. Armstrong, T. Ramasami, A. Geoffrey Sykes
- 1019 Conformational Analysis for the Alkyl Ligands (R) in Complexes of the Type (η<sup>5</sup>-C<sub>5</sub>H<sub>5</sub>)Fe(CO)(PPh<sub>3</sub>)R Jeffrey I. Seeman, Stephen G. Davies
- 1021 Preparation and Molecular Structure of 1-Chloro-3,5-diphenyl-1,2,4,6-thiatriazine; Reduction of Ph<sub>2</sub>C<sub>2</sub>N<sub>3</sub>SCl and the E.S.R. Spectrum of the (Ph<sub>2</sub>C<sub>2</sub>N<sub>3</sub>S) Radical A. Wallace Cordes, Patrick J. Hayes, P. David Josephy, Hans Koenig, Richard T. Oakley, William T. Pennington
- 1023 A Novel Trico-ordinated Boronium Salt: 1,3-Dimethyl-2-phenanthridin-5-yl-1,3,2-diazaborolidinium Trifluoromethanesulphonate Chaitanya K. Narula, Heinrich Nöth
- 1024 Diffusion of Large Amine Ligands into Layered α-Zr(HPO<sub>4</sub>)<sub>2</sub>·H<sub>2</sub>O. Access to a Solid-state Co-ordination Chemistry Carla Ferragina, Maria Massucci, Aldo La Ginestra, Pasquale Patrono, Anthony A. G. Tomlinson
- 1025 The Synthesis of Mixed-valence Dirhodium Carbonyl Complexes, and the X-Ray Crystal Structures of [{Rh(CO)(PPh<sub>3</sub>)(μ-RNNNR)}<sub>2</sub>] and [{Rh(CO)(PPh<sub>3</sub>)(μ-RNNNR)}<sub>2</sub>][PF<sub>6</sub>] (R = p-Tolyl) Neil G. Connelly, Crispin J. Finn, Mark J. Freeman, A. Guy Orpen, Janet Stirling
- 1028 Dithioacetals and Related Derivatives of Tetrahydrofuran-2-carbaldehyde Alexander Mottoh, Colin B. Reese
- 1029 Complete Stereoselectivity in the Intramolecular Diels-Alder Reaction of an Ester derived from 'Diacetone Glucose' Fraser-Reid, Zoltán Benkő, Robert Guiliano, King Mo Sun, Nick Taylor
- 1031 Flavin Mimics possessing Remarkably High Oxidizing Power: 6,8-Diazaflavins Yumihiko Yano, Masashi Ohshima, Susumu Sutoh, Michiaki Nakazato
- 1032 Proton Transfer between 2,6-Di-t-butylpyridine and its Conjugate Acid in an Aprotic Solvent Victor Gold, Rosemary A. Lee
- 1034 A New Type of Conducting Ion-radical Salts containing 7,7,8,8-Tetracyanoquinodimethane and Halide Anion Wolfgang Bunzel, Fritz Vögtle
- Segregated Stack Crystal Structure of an Ion-radical Salt based on 7,7,8,8-Tetracyanoquinodimethane Wolfgang Bunzel, Fritz Vögtle, Sybille Franken, Heinrich Puff
- 1037 Dehydrogenation of Propan-2-ol to Acetone catalysed by Zirconium Oxide treated with Selenate and Tellurate Ions Makoto Hino, Kazushi Arata
- Asymmetric Induction in Cyclopropanation with Homogeneous and Immobilized Chiral Metal β-Diketonate Catalysts Stephen A. Matlin, W. John Lough, Lam Chan, David M. H. Abram, Ziqing Zhou
- 1040 Synthesis of (R)-4-Hydroxy-2-benzyloxymethylcyclopent-2-en-1-one from D-Glucose via Palladium(0)-catalysed Rearrangement of a Vinylic Epoxide Intermediate Saïd Achab, Jean-Pierre Cosson, Bhupesh C. Das
- 1041 Extraction of Highly Hydrophilic Anions in Low Polarity Media under Phase-transfer Catalysis Conditions: Dramatic Enhancement of the OH- Reactivity by Reduction of its Specific Hydration Dario Landini, Angelamaria Maia
- 1043 Latifine, a Biogenetic Isomer of Cherylline, from Crinum latifolium L. Shigeru Kobayashi, Toshihiro Tokumoto, Zenei Taira

#### 1044 Corrigenda

The Radical-cation of p-Benzoquinone Harish Chandra, Martyn C. R. Symons Synthesis and Crystal Structure of the Silver(1) Alkyl Species, [{2-(Me<sub>3</sub>Si)<sub>2</sub>C(Ag)C<sub>5</sub>H<sub>4</sub>N}<sub>2</sub>], a Dimeric Compound Void of Electron-deficient Bonding Rocco I. Papasergio, Colin L. Raston, Allan H. White Total Synthesis of (±)-Androst-4-en-3-one-17-carboxylic Acid Jih Ru Hwu, Eric Jan Leopold

#### AUTHOR INDEX

Abell, Chris, 1005 Abram, David M. H., 1038 Achab, Saïd, 1040 Adlington, Robert M., 984 Anderson, Stewart N., 958 Arata, Kazushi, 1037 Arduini, Arturo, 981 Armstrong, Fraser A., 976 Armstrong, Graeme D., 1017 Guiliano, Robert, 1029 Baker, Murray V., 996 Baker, Raymond, 987 Baldwin, Jack E., 984 Bandyopadhyay, Debkumar, Bandyopadhyay, Pinaki, 999 Bargon, Joachim, 1015 Barr, Donald, 974 Battye, Peter J., 990 Benkö, Zoltán, 1029 Bunzel, Wolfgang, 1034, 1035 Hughes, David L., 958, 992 Buttafava, Armando, 998 Carlton, Laurence, 964 Chakravorty, Animesh, 999 Chandra, Harish, 1044 Chan, Lam, 1038 Ciampolini, Mario, 998 Clark, James H., 1014 Clayton, Edward, 969 Clegg, William, 974 Connelly, Neil G., 1025 Cordes, A. Wallace, 1021 Cork, David G., 1014 Cosson, Jean-Pierre, 1040 Couldwell, M. Claire, 979 Crombie, Leslie, 953 Curzon, Eirian H., 1012 Das, Bhupesh C., 1040 Davidson, Jack L., 964 Davies, Michael J., 966 Davies, Stephen G., 956, 1019 De Paoli, Marco-A., 1015 Dhanak, Dashvant, 988 Diaz, Arturo F., 1015 Dordor, Isabelle M., 956 Edwards, Peter P., 982 Emoto, Mitsuhiro, 968 Fabbrizzi, Luigi, 998 Ferragina, Carla, 1024 Field, Leslie D., 984, 996 Finn, Crispin J., 1025 Franken, Sybille, 1035

Fraser-Reid, Bert, 1029 Freeman, Mark J., 1025 Fujii, Takuji, 1010 Fujita, Eiichi, 1007 Fukushima, Takakazu, 962 Gallop, Mark A., 1002 Gilbert, Bruce C., 966 Gold, Victor, 1032 Handa, Tadahiko, 994 Harnett, Michelle, 979 Harrison, Martin R., 982 Hayes, Patrick J., 1021 Hill, H. Allen O., 976 Hino, Makoto, 1037 Holloway, Stephen J., 953 Hoskins, Simon V., 1000 House, Donald A., 979 Howarth, Oliver W., 1012 Hwu, Jih Ru, 1044 Ichikawa, Masaru, 962 Inamoto, Naoki, 1010 Ishizaki, Miyuki, 1016 Ito, Wataru, 1004 Johnson, David C., 982 Johnson, Graham, 970 Jones, David W., 990 Jones, Tony C., 1002 Josephy, P. David, 1021 Karunaratne, Veranja, 959 Keen, Rona B., 987 King, R. Bruce, 955 Kirk, Alexander D., 961 Klinowski, Jacek, 982 Kobayashi, Shigeru, 1043 Kocienski, Philip, 1011 Koenig, Hans, 1021 Kosugi, Nobuhiro, 962 Kroto, Harold W., 993 Kumazoe, Makoto, 980 Kuroda, Haruo, 962 Kurosawa, Hideo, 968 La Ginestra, Aldo, 1024 Landini, Dario, 1041 Langford, Cooper H., 961 Lee, Rosemary A., 1032 Leopold, Eric Jan, 1044 Lesage, Rene, 961 Lough, W. John, 1038 McCleland, Cedric W., 966

MacLeod, Angus M., 1008 McNaughton, Don, 993 Mahapatra, Amiya K., 999 Maia, Angelamaria, 1041 Maruyama, Kazuhiro, 1004 Massucci, Maria, 1024 Matlin, Stephen A., 1038 Micheloni, Mauro, 998 Moloney, Mark G., 965 Moore, Barry D., 972 Moroney, Simon E., 984 Morris, Michael D., 987 Mottoh, Alexander, 1028 Mulvey, Robert E., 974 Nagao, Yoshimitsu, 1007 Nakazato, Michiaki, 1031 Nardi, Nicoletta, 998 Narula, Chaitanya K., 1023 Nishiwaki, Koichi, 980 Nöth, Heinrich, 1023 Oakley, Richard T., 1021 Ochiai, Masahito, 1007 Ohshima, Masashi, 1031 Okazaki, Renji, 1010 Oliver, B. Nigel, 976 Orpen, A. Guy, 1025 Osman, Osman I., 993 Page, Catherine J., 982 Papasergio, Rocco I., 1044 Patrono, Pasquale, 1024 Pennington, William T., 1021 Perotti, Angelo, 998 Pickett, Christopher J., 992 Piers, Edward, 959 Pinhey, John T., 965 Pochini, Andrea, 981 Poliakoff, Martyn, 972 Pombeiro, Armando J. L., 992 Puff, Heinrich, 1035 Ramage, Robert, 1008 Ramasami, T., 1017 Ramdas, Subramanian, 982 Raston, Colin L., 1044 Reese, Colin B., 988, 1028 Rees, Peter M., 970 Reverberi, Sara, 981 Richards, Raymond L., 958, Rickard, Clifton E. F., 1000,

Robinson, Ward T., 979 Roper, Warren R., 1000, 1002 Ross, Barry C., 970 Sadanani, Narayan D., 955 Saint Joly, Christine, 961 Seeman, Jeffrey I., 1019 Sharma, Devendra K., 961 Simpson, Michael B., 972 Snaith, Ronald, 974 Soai, Kenso, 1016 Staunton, James, 1005 Steyn, Pieter S., 977 Stirling, Janet, 1025 Sun, King Mo, 1029 Sutoh, Susumu, 1031 Sykes, A. Geoffrey, 1017 Symons, Martyn C. R., 1044 Taira, Zenei, 1043 Taylor, Nick, 1029 Thomas, C. Barry, 966 Thomas, John M., 982 Ting, Hong-Hoi, 984 Tokumoto, Toshihiro, 1043 Tomlinson, Anthony A. G., 1024 Turner, James J., 972 Turner, Ralph W., 987 Ukita, Tatsuzo, 1007 Ungaro, Rocco, 981 Urabe, Akira, 968 Urech, Rudolf, 989 Vizza, Francesco, 998 Vleggaar, Robert, 977 Vögtle, Fritz, 1034, 1035 Wada, Masanori, 980 Wakefield, Anthony J. C., 969 Wakui, Tadahiro, 994 Waltman, Robert J., 1015 Warner, Peter, 956 White, Allan H., 1044 Williams, David E., 988 Willson, Timothy M., 1011 Yamamoto, Yoshinori, 1004 Yamazaki, Kunihiko, 962 Yano, Yumihiko, 1031 Yokoyama, Toshihiko, 962 Young, John, 966 Zhou, Ziqing, 1038

1002



### TWO NEW BOOKS FOR TEACHERS AND STUDENTS OF CHEMISTRY RSC PAPERBACKS

In 1983 The Royal Society of Chemistry introduced a new series of inexpensive texts for students and teachers. Topics covered relate to those subjects which are commonly featured in courses on chemistry and related areas, which are currently taught in schools, universities and colleges.

Prices quoted below apply to both RSC Members and non-RSC Members.

# FOOD: The Chemistry of its Components



By T. P. Coultate

Softcover 202pp 0 85186 483 X (1984)

Price £5.95 (\$11.00)

This book gives a detailed account of the chemistry of the principal substances of which our food is composed. Both the macro-components, the carbohydrates, lipids and proteins, which can be classified by their chemical structures, and the micro-components, the colours, flavours, vitamins and preservatives, which are classified in terms of function are considered. Throughout the book, Dr Coultate's theme is the relationship between the chemical structure of a substance and its contribution to the properties and behaviour of foodstuffs-whether observed in the laboratory, the factory, the kitchen or the dining room.

#### Contents:

Introduction, carbohydrates, lipids, proteins, colours, flavours, vitamins, preservatives, EEC numbers of food additives. Subject index. This book will be of particular benefit to students and teachers of food science and related courses in universities, colleges of further education and schools.

ORDERING RSC Members should send their orders to:
The Membership Officer, The Royal Society of Chemistry, 30 Russell Square, London WC1B 5DT.
Non-RSC Members should send their orders to:
The Royal Society of Chemistry, Distribution Centre, Blackhorse Road, Letchworth, Herts SG6 1HN



The Royal Society of Chemistry,
Burlington House
Piccadilly
London W1V 0BN



## WATER Revised 1st Edition

By Felix Franks

Softcover 102pp 0 85186 473 2 (1984)

Price £2.50 (\$6.00)

The book considers the present state of our knowledge of liquid water, its remarkable physical properties and how these give rise to a unique structure, its influence on the interactions between solutes, its role in maintaining biologically active structures, its involvement in chemical reactions and the problems posed by its management and in providing sufficient amounts of water of adequate quality.

An understanding of the behavioural properties of water is fundamental to gaining an appreciation of many scientific processes and principles. Science students and teachers will, therefore, find *Water* not only interesting reading, but also of considerable relevance to their studies.

#### Contents:

Occurrence, importance and physical properties; The place of water in the general classification of liquids; Isotopic composition; The structure of the water molecule and the nature of the hydrogen bond in water: Ice – its structure and dynamics; The structure of liquid water; The dynamic properties of liquid water; Towards a molecular description of water; Aqueous solutions of simple molecules; Aqueous solutions of electrolytes; The role of water in the stabilisation of biologically significant structures; Reactions in aqueous solutions; Water in the environment – quality, availability and exploitation; Summary and future prospects.



### CLASSIFIED ADVERTISEMENTS

#### UNIVERSITY OF YORK DEPARTMENT OF CHEMISTRY POSTDOCTORAL RESEARCH FELLOWSHIP

Applications are invited for a two year postdoctoral fellowship to work with Dr M. Green on reactions of platinum compounds and nucleobases. The work will involve mechanistic studies on platinum complex and guanosine etc. and some synthesis of purines, and is aimed at increasing our knowledge of how anti-cancer drugs, such as cis-platin, function.

The starting salary will be £7,190 or £7,630 per annum, with USS. Applications, together with the names of two referees and curriculum vitae, should be sent as soon as possible to Dr M. Green, Department of Chemistry, University of York, Heslington, York YO1 5DD. UK. (Telephone [0904] York 59861 ext 342 or 304), from whom further information is available.

# CLASSIFIED ADVERTISING

DISPLAY AND SEMI-DISPLAY £7.00 per single col. cm. column width 43mm (10 ems)

Send your advertisements:—

Classified
Advertisements,
Burlington
House
Piccadilly,
London
W1V 0BN.