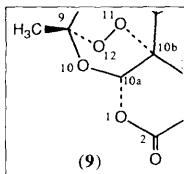


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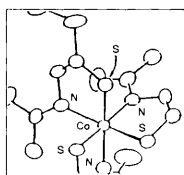
Artemisinin (Qinghaosu): A New Type of Antimalarial Drug By Anthony R. Butler and Yu-Lin Wu (pp.85-90)

DDT nearly eradicated mosquitoes, carriers of *Plasmodium* species, the cause of malaria in humans. However, the ecological and other problems arising from this chemical eventually limited its use, and the mosquito and malaria have returned with a vengeance. Artemisinin is an anti-malarial drug, derived from the ancient Chinese remedy *qinghao*, isolated from a common weed. This remarkable compound is the only 1,2,4-trioxane found in Nature and will aid the chemotherapy of malaria, which hitherto has relied on quinine and its synthetic analogues.



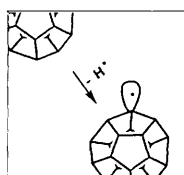
Calculating Molecular Spectra By Jonathan Tennyson and Steven Miller (pp.91-99)

A survey is presented of the theoretical procedures currently being developed to determine the vibration-rotation spectra of small polyatomic molecules to the highest possible accuracy. The application of these new computational methods is illustrated by specific reference to the ion H_3^+ , the van der Waals complex $Ar-N_2$, and the isomerization $LiCN$. The importance of accurate theories for a better understanding of astronomical and atmospheric spectroscopic opacities and associated phenomena is also discussed.



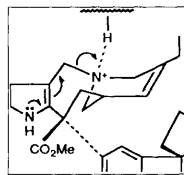
Transmetallation and its Applications By Geoffrey Davies, Mohamed A. El-Sayed, and Ahmed El-Toukhy (pp.101-104)

The scope is described of stoichiometric transmetallation reactions by which new hetero-polymetallic inorganic complexes can be prepared. The reactions are classified on the basis of the extent to which the metal centres in a polymetallic target complex (a Lewis base) are replaced by the metal atoms in a transmetallator [a Lewis acid; e.g. $Zn(NS)_2$]. General features of the reactions are reviewed and possible future developments signalled.



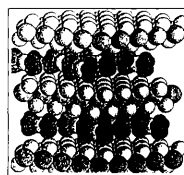
Bridgehead Radicals By John C. Walton (pp.105-112)

The rigid structures of bridgehead radicals (such as adamantyl) give them properties different from those of acyclic tertiary radicals and make them of considerable theoretical importance. Calculations and spectroscopic techniques (principally EPR) are important tools in exploring this fascinating group of reactive intermediates.



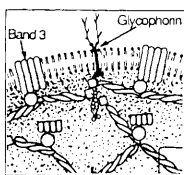
RHÔNE-POULENC LECTURE: Search and Discovery of New Antitumour Compounds By Pierre Potier (pp.113-119)

Ellipticine and vinblastine alkaloids are antitumour drugs obtained from plants, the activity of which can be improved by judicious chemical modification. The very promising anticancer agent taxol is obtained from the bark of the yew, but the yield is low and the extraction procedure is destructive of the tree. Pierre Potier has solved this problem by obtaining a precursor of taxol, easy to convert into taxol, from leaves of the common shrub *Taxus baccata*.



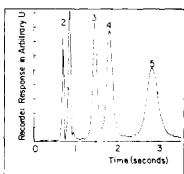
Structure, Dynamics, and Electronic Properties of Cobaltocene in $SnS_{2-x}Se_x$ ($0 \leq x \leq 2$) By D. O'Hare (pp.121-126)

The intercalation of cobaltocene, $[Co(\eta-C_5H_5)_2]$, into single crystals of $SnS_{2-x}Se_x$ has yielded an interesting system which has been structurally characterized in some detail. X-Ray and neutron diffraction studies have demonstrated that the $Co(\eta-C_5H_5)_2$ molecules become incorporated between the layers in a very ordered fashion with the principal axis of the cobaltocene molecules parallel to the basal planes of the chalcogenide lattice. The intercalated materials show remarkable conductivity properties with $SnS_{2-x}Se_x\{Co(\eta-C_5H_5)_2\}_{0.33}$ ($1.85 \leq x \leq 2$) displaying superconductivity below 6K.



Surfactant Interactions with Biomembranes and Proteins By M. N. Jones (pp.127-136)

Surfactants such as SDS (sodium dodecylsulfate), membrane lipids, and proteins are amphiphathic, containing both hydrophobic and hydrophilic domains. These groups of compounds are reviewed with reference to surfactant-phospholipid, surfactant-cell membrane, and surfactant-globular protein interactions. The binding of surfactants to proteins is examined from the standpoint of binding isotherms and the structures of the complexes determined by scattering techniques.



Modern Liquid Chromatography By R. P. W. Scott (pp.137-145)

In Liquid Chromatography (LC), the mobile phase is a solution and the stationary phase is usually based on silica. The roles of molecular interactions and molecular size in controlling separation are discussed in the context of the preparation of the stationary phase. Band dispersion is examined by identifying three important processes: multipath effect, longitudinal diffusion, and resistance to mass transfer. The review concludes by examining the basic components of a modern LC chromatograph.

Articles that will appear in forthcoming issues include

The Construction of a Molecular Lego Set **J. F. Stoddart**

Solvatochromism, Thermochromism, Piezochromism, Halochromism, and Chiro-Solvatochromism of Pyridinium N-Phenoxide Betaine Dyes **C. Reichardt**

Molecular Dynamics Simulations of Surface Chemical Reactions **B. J. Garrison**

Magic Numbers in Molecular Clusters: A Probe for Chemical Reactivity **M. T. Coolbaugh and J. F. Garvey**

Binuclear Iron Centres in Proteins **R. G. Wilkins**

Ruthenium Oxo Complexes as Organic Oxidants **W. P. Griffith**

Molecular Fluorescent Signalling with 'Fluor-Spacer-Receptor' Systems: Approaches to Sensing and Switching Devices *via* Supramolecular Photophysics **A. P. de Silva et al.**

Electrochemical Aspects of STM and Related Techniques **P. A. Christensen**

Caged Explosives: Metal-Stabilized Chalcogen Nitrides **J. D. Woollins et al.**

Synthetic Amphiphile Vesicles **A. M. Carmona-Ribeiro**

Peptide Structure from NMR **M. P. Williamson and J. P. Waltho**

Zero Oxidation State Compounds of Scandium, Yttrium, and the Lanthanides **F. G. N. Cloke**

Motion of Sorbed Gases in Polymers **W.-Y. Wen**

Individual Solvated Ion Properties and Specificity of Ion Adsorption Effects in Processes at Electrodes **B. E. Conway**

Transition Metal Complexes of Silylenes, Silenes, Disilenes, and Related Species **P. D. Lickiss**

H₃⁺ in Space **S. Miller and J. Tennyson**

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