

JOURNAL  
OF  
THE CHEMICAL SOCIETY

PERKIN TRANSACTIONS II  
Physical Organic Chemistry

CONTENTS

	PAGE
Electric dipole moments and molecular conformations of acetophenone oximes and benzaldoximes By SAUMYENDUNARAYAU BASU and CHARLES W. N. CUMPER . . . . .	325
Kinetics and mechanism of chromic acid oxidation of chalcones (phenyl styryl ketones) By N. C. KHANDUAL, K. K. SATPATHY, and P. L. NAYAK . . . . .	328
Crystal structure of 2-hydroxy-1,3,4,6,8,9-hexamethyltricyclo[4.4.0.0 <sup>2,8</sup> ]deca-3,9-dien-5-one By CEDRIC A. BEAR and JAMES TROTTER . . . . .	330
A comparative study of the aromatic character of furan, thiophen, selenophen, and tellurophen By FRANCESCO FRINGUELLI, GIANLORENZO MARINO, ALDO TATICCHI, and GIULIANO GRANDOLINI . . . . .	332
Solvent effects on circular dichroism induced in arylarenecarboxylic acids by optically active amines By NIICHIRO TOKURA, TOSHIKAZU NAGAI, SHUNSUKE TAKENAKA, and TAKUMI OSHIMA . . . . .	337
Solvent effects in the photoisomerization of phenazine 5-oxide By ANGELO ALBINI, GIAN FRANCO BETTINETTI, and SILVIO PIETRA . . . . .	342
X-Ray structure analysis of methyl 2,3,4,5-tetra-O-acetyl- $\alpha$ -D-glucoseptanoside By JACK F. McCONNELL and JOHN D. STEVENS . . . . .	345
Mechanism of decarboxylation of bicyclic acids by lead tetra-acetate By BARRIE C. C. CANTELLO, JOHN M. MELLOR, and GARY SCHOLES . . . . .	348
Studies in vacuum ultraviolet photochemistry IV. Diethyl ether By CHRISTOPHER A. F. JOHNSON and WILLIAM M. C. LAWSON . . . . .	353
Polarographic determination of hydrogen ion activities. Part IV. Basic solutions containing alkali metal ions By JIŘÍ JANATA and JAMES TAYLOR . . . . .	356
Molecular complexes. Part XIII. Confirmation for methods proposed for rationalizing the processing of data obtained from nuclear magnetic resonance studies By JOHN HOMER and ALAN R. DUDLEY . . . . .	358
Crystal structure of 6 $\beta$ -trimethylammoniopenicillanate hemihydriodide By PHILIP J. COX, RICHARD J. MCCLURE, and GEORGE A. SIM . . . . .	360
Role of imperfections in the dimerization of substituted anthracenes. Part I. 1,8-Dichloro-9-methyl-anthracene By JEAN-PIERRE DESVERGNE, J. M. THOMAS, J. O. WILLIAMS, and H. BOUAS-LAURENT . . . . .	363
A nitrogen-14 nuclear magnetic resonance study of amino-acids, peptides, and other biologically interesting molecules By REX E. RICHARDS and NIGEL A. THOMAS . . . . .	368
Carbon-13 nuclear magnetic resonance spectra of 5-alkyl-5-(1-methylbutyl)barbituric acids By F. IVY CARROLL and CHARLES G. MORELAND . . . . .	374

Strain effects in acyl transfer reactions. Part III. Hydroxide and buffer-catalysed hydrolysis of small and medium ring lactones By G. MICHAEL BLACKBURN and HARVEY L. H. DODDS . . . . .	377
The kinetics and mechanism of the electrophilic substitution of heteroaromatic compounds. Part XXXV. The nitration of phenylpyrazolones By ALAN G. BURTON, MEHMET DERELI, ALAN R. KATRITZKY, and H. OKAN TARHAN . . . . .	382
The kinetics and mechanism of the electrophilic substitution of heteroaromatic compounds. Part XXXVI. The nitration of some 1-phenylpyrazoles By ALAN G. BURTON, ALAN R. KATRITZKY, MUSTAFA KONYA, and H. OKAN TARHAN . . . . .	389
The kinetics and mechanism of the electrophilic substitution of heteroaromatic compounds. Part XXXVII. The acid catalysed de-tritiation of benzene and naphthalene By JOHN BANGER, C. DAVID JOHNSON, ALAN R. KATRITZKY, and BRENDAN R. O'NEILL . . . . .	394
The kinetics and mechanism of the electrophilic substitution of heteroaromatic compounds. Part XXXVIII. Hydrogen exchange of isoxazoles and isothiazoles By SERGIO CLEMENTI, PAUL P. FORSYTHE, C. DAVID JOHNSON, ALAN R. KATRITZKY, and BULENT TEREM . . . . .	399
The conformational analysis of saturated heterocycles. Part LVI. Substituent effects in the conformational equilibria of spiro-oxazolines By RICHARD A. Y. JONES, ALAN R. KATRITZKY, KEITH A. F. RECORD, ROGER SCATTERGOOD, and JOHN M. SULLIVAN . . . . .	402
The conformational analysis of saturated heterocycles. Part LVII. Cyclic and acyclic tetra-alkylhydrazines By RICHARD A. Y. JONES, ALAN R. KATRITZKY, KEITH A. F. RECORD, and ROGER SCATTERGOOD . . . . .	406
Polar and steric effects in the homolytic amination of alkylbenzenes and biphenyl By A. CLERICI, F. MINISCI, M. PERCHINUNNO, and O. PORTA . . . . .	416
Electronic charge distribution and moments of five- and six-membered heterocycles By MICHAEL H. PALMER, ROBERT H. FINDLAY, and (in part) ANTHONY J. GASKELL . . . . .	420
Heterogeneous reactions with organic solids. Part I. The stereospecific dehydrohalogenation of solid $\beta,\beta'$ -dihalogenoadipates by gaseous amines By GAD FRIEDMAN, MEIR LAHAV, and (the late) GERHARD M. J. SCHMIDT . . . . .	428
Conformational studies. Part V. The crystal and molecular structures of dimethyl <i>meso</i> - $\beta\beta'$ -dichloroadipate By HERSH W. KAUFMAN, DOV RABINOVICH, and (the late) GERHARD M. J. SCHMIDT . . . . .	433
Nucleophilic substitution at bivalent sulphur. Part IV. A mechanistic study of the base-catalysed hydrolysis of derivatives of 2-nitro-4-trifluoromethylbenzenesulphenic acid using $^{19}\text{F}$ nuclear magnetic resonance spectroscopy By DONALD R. HOGG and JOSEPH STEWART . . . . .	436
The stabilities of Meisenheimer complexes. Part VII. Adducts from 4-methoxy-3,5-dinitrobenzaldehyde By MICHAEL R. CRAMPTON, MUKHTAR A. EL GHARIANI, and MICHAEL J. WILLISON . . . . .	441
Kinetics and mechanism of the acid-catalysed hydrolysis of sodium <i>N</i> -1-naphthylsulphamate By WILLIAM J. SPILLANE, NOEL REGAN, and FRANCIS L. SCOTT . . . . .	445

## INDEX OF AUTHORS' NAMES

- ALBINI, A., Bettinetti, G. F., and Pietra, S., 342  
Banger, J., Johnson, C. D., Katritzky, A. R., and O'Neill, B. R., 394  
Basu, S., and Cumper, C. W. N., 325  
Bear, C. A., and Trotter, J., 330  
Bettinetti, G. F. See Albini, A., 342  
Blackburn, G. M., and Dodds, H. L. H., 377  
Bouas-Laurent, H. See Desvergne, J-P., 363  
Burton, A. G., Dereli, M., Katritzky, A. R., and Tarhan, H. O., 382  
Burton, A. G., Katritzky, A. R., Konya, M., and Tarhan, H. O., 389  
Cantello, B. C. C., Mellor, J. M., and Scholes, G., 348  
Carroll, F. I., and Moreland, C. G., 374  
Clementi, S., Forsythe, P. P., Johnson, C. D., Katritzky, A. R., and Terem, B., 399  
Clerici, A., Perchinunno, M., and Porta, O., 416  
Cox, P. J., McClure, R. J., and Sim, G. A., 360  
Crampton, M. R., El Ghariani, M. A., and Willison, M. J., 441  
Cumper, C. W. N. See Basu, S., 325  
Dereli, M. See Burton, A. G., 382  
Desvergne, J-P., Thomas, J. M., Williams, J. O., and Bouas-Laurent, H., 363  
Dodds, H. L. H. See Blackburn, G. M., 377  
Dudley, A. R. See Homer, J., 358  
El Ghariani, M. A. See Crampton, M. R., 441  
Findlay, R. H. See Palmer, M. H., 420  
Forsythe, P. P. See Clementi, S., 399  
Friedman, G., Lahav, M., and Schmidt, G. M. J., 428  
Fringuelli, F., Marino, G., Taticchi, A., and Grandolini, G., 332  
Gaskell, A. J. See Palmer, M. H., 420  
Grandolini, G. See Fringuelli, F., 332  
Hogg, D. R., and Stewart, J., 436  
Homer, J., and Dudley, A. R., 358  
Janata, J., and Taylor, J., 356  
Johnson, C. A. F., and Lawson, W. M. C., 353  
Johnson, C. D. See Banger, J., 394; and Clementi, S., 399  
Jones, R. A. Y., Katritzky, A. R., Record, K. A. F., and Scattergood, R., 406  
Jones, R. A. Y., Katritzky, A. R., Record, K. A. F., Scattergood, R., and Sullivan, J. M., 402  
Katritzky, A. R. See Banger, J., 394; Burton, A. G., 382, 389; Clementi, S., 399; and Jones, R. A. Y., 402, 406  
Kaufman, H. W., Rabinovich, D., and Schmidt, G. M. J., 433  
Khandual, N. C., Satpathy, K. K., and Nayak, P. L., 328  
Konya, M. See Burton, A. G., 389  
Lahav, M. See Friedman, G., 428  
Lawson, W. M. C. See Johnson, C. A. F., 353  
McClure, R. J. See Cox, P. J., 360  
McConnell, J. F., and Stevens, J. D., 345  
Marino, G. See Fringuelli, F., 332  
Mellor, J. M. See Cantello, B. C. C., 348  
Minisci, F. See Clerici, A., 416  
Moreland, C. G. See Carroll, F. I., 374  
Nagai, T. See Tokura, N., 337  
Nayak, P. L. See Khandual, N. C., 328  
O'Neill, B. R. See Banger, J., 394  
Oshima, T. See Tokura, N., 337  
Palmer, M. H., Findlay, R. H., and Gaskell, A. J., 420  
Perchinunno, M. See Clerici, A., 416  
Pietra, S. See Albini, A., 342  
Porta, O. See Clerici, A., 416  
Rabinovich, D. See Kaufman, H. W., 433  
Record, K. A. F. See Jones, R. A. Y., 402, 406  
Regan, N. See Spillane, W. J., 445  
Richards, R. E., and Thomas, N. A., 368  
Satpathy, K. K. See Khandual, N. C., 328  
Scattergood, R. See Jones, R. A. Y., 402, 406  
Schmidt, G. M. J. See Friedman, G., 428; and Kaufman, H. W., 433  
Scholes, G. See Cantello, B. C. C., 348  
Scott, F. L. See Spillane, W. J., 445  
Sim, G. A. See Cox, P. J., 360  
Spillane, W. J., Regan, N., and Scott, F. L., 445  
Stevens, J. D. See McConnell, J. F., 345  
Stewart, J. See Hogg, D. R., 436  
Sullivan, J. M. See Jones, R. A. Y., 402  
Takenaka, S. See Tokura, N., 337  
Tarhan, H. O. See Burton, A. G., 382, 389  
Taticchi, A. See Fringuelli, F., 332  
Taylor, J. See Janata, J., 356  
Terem, B. See Clementi, S., 399  
Thomas, J. M. See Desvergne, J-P., 363  
Thomas, N. A. See Richards, R. E., 368  
Tokura, N., Nagai, T., Takenaka, S., and Oshima, T., 337  
Trotter, J. See Bear, C. A., 330  
Williams, J. O. See Desvergne, J-P., 363  
Willison, M. J. See Crampton, M. R., 441

\* The author to whom correspondence should be addressed is indicated by an asterisk after his name in the heading of the Paper.

