

Subject Index 1983

Acetals

acyclic decarbonylation of 5-methylfurfural via α -hydroperoxyhemiacetal, 1193
aldehydes, esters or ketones, reaction with 5-diphenyl phosphinoylpentan-2-one ethylene acetal, 2603
and ketals, cleavage, use of dimethylboron bromide or diphenylboron bromide, 3969
chemistry of O-silylated ketene acetals, 1273
chiral, cleavage using organoaluminum reagents, prep of optically active alcohols, 4581
conjugate additions, O-silylated ketene acetals to activated enones, 4943
cyclopropane acetals and hemiacetals, substituted, synthesis, 1251
dialkyl thioamides, conversion to (Z,N)-dialkyl S-trimethylsilylketene S,N-acetals, 4001
dimethylaminoacetals, reaction with tri-*t*-butylphenylphosphine, 5855
dioxetane from thioketeneacetal, 673
functionalised mixed of olefinic and acetylenic alcohols, via oxymercuration-demercuration, 4923
Horner Wittig solution to ketene O,O-acetals synthesis, 1303
ketene acetals, cycloadditions with carbonyl compds, under pressure, 4613
ketene silyl acetals, reaction with hexahydro-1,3,5-triazines, 913
kinetic acetalisation for 1,2- and 1,3-diol protection, 4037
prep of *p*-methoxybenzylidene acetals, 4037
thioacetals from aldehydes and ketones, 1289
trimethylsilylketene acetals, prep and cycloaddition with juglone, 2757
use as linking group for diene and dienophile in intramolecular

Diels-Alder, 5035
vinylketene silyl acetals, coupling promoted by TiCl₄, 785

Acridines

chemiluminescence of N-methyl-9-(dicarboalkoxymethyl)acridanes, 3005
photosensitised *cis*-9-styryl-acridines, high enthalphy value in thermal isomerisation, 3903

Adamantanes

reactions of 1,3-dehydroadamantane with aniline in presence of its hydrochloride, *p*-toluenesulphonamide and malonic ester, 613

Addition reactions see also Cycloadditions

acrolein and guanosine and 2'-deoxyguanosine in DMSO, 4491
activated acyclic donors with β,β -disubstituted enone acceptors, 3841
activated enones to O-silylated ketene acetals, 4943
adduct of dimethylacetylenedicarboxylate and 3-methyl-4-(1-pyrrolidinyl)-2H-thiochromene, 2413
adduct of glyoxalic acid-methyl carbamate, formation of α -acylamino- γ -alkenyl- γ -butrolactone, 955
adducts of allenes with benzene-selenenyl halides, rearrangements, 2689
alcohol and methylpropionic esters, 5209
aldehydes and ketones to lithiated or titanated O-allyl carbamates, 1687
aldehydes to α -substituted allylboronates, Z-preference to homoallyl alcohols, 3209
alkenes to 2,3-dioxopyrrolidine-4-carboxylates, 1949
alkenes to N-substituted phthalimides, 143
alkynylsilanes to α,β -ethylenic

acyl cyanides, 1395
allylsilane to Michael acceptors, chemoselectivity, 1909, 1913
amine nucleophilites to diphenylalkynes, 1679
amphiphilic carbene to 1,1-diethoxyethylene and *t*-butylfumarate, 4199
and alkylated products, aldehydes and alkyl halides to lithio dichloromethyl phenyl sulphoxides, 527
aromatic aldehydes to (R,R)-2-*t*-butyl-1-aza-3-oxa-7-thia-bicyclo[3.3.0]octan-4-one, 3315
ArSeCl and ArSeCl to 1-(4-X-phenyl)propenes, S-Cl bond breaking and C-S bond making, 5299
asymmetric 1,4-, coordinated MeCu.BF₄ to chiral enoates, 4971
asymmetric Michael, chiral ester-dienolate to cyclopentenone, synthesis of (-)-khusimone, 4975
azlactones from α -amino acid derivs to fumaric diester or dinitrile, 189
benzylamine to α,β -unsaturated ester derived from D-glycer-aldehyde acetonide, 3009
benzyltrimethylsilane to aldehydes and ketones, 4217
bromine and osmium tetroxide to boat-shaped benzene deriv, reactions of [6]paracyclophane-8,9-dicarboxylic diethyl ester, 2549
bromophenylthio(trimethylsilyl)methane to trimethylsilyl enol ethers, 419
carboxylate salts to cyclic allylic epoxides, 441
chlorine to axial conformer of 4-RO-cyclohexenes, 5133
cyclopentadiene and phosphole oxide, adducts, irradiation, 3353
cyclopentene to *cis*- and *trans*-2-butene and to 1,3-butadiene, 5495
deprotonated ketimines to aldehydes and ketones, 2481
dialkyl cuprate reagents to alkyl-

- cyclopropyl ketones, 5521
 diazo compds, to dehydro-alanine derivs, synthesis of cyclopropyl amino acids, 3839
 dichlorocarbene to tetraphenyl-cyclone, new product, 4891
 dichloroketene to methylene cyclobutane, 2731
 Diels-Alder, 5-exo,5-endo and 5-endo,5-exo-(epoxy-methano)-2,3-bis(methylene)bicyclo[2.2.1]heptanes and 5-exo,5-endo and 5-endo,5-exo(epoxymethano)2,3-6-tris(methylene)-7-oxa bicyclo[2.2.1]heptanes, 3603
 diene and N-sulphinyltoluene-sulphonamide adduct, synthesis of unsaturated acyclic amines, 987
 dienes to haloquinones, 2453
 dienophiles high pressure Diels-Alder reaction with 5-alkoxy pentadienoates, 899
 dimer of 2-methyl-1,1-diphenylpropyl radicals and its reactivity, 3307
 dimethyl acetylenedicarboxylate and dehydroaculiferine, 2:1-adduct structure, 167
 dimethyl and diethylgermylene to 7-membered thiacycloalkyne, 4083
 erthroselectivity, γ -substituted allylsilanes to aldehydes in presence of $TiCl_4$, 2865
 ethanol and ketones to allyl dienyl sulphones, 1783
 functionalised organolithium compds with p-benzoquinones and cyclohexadienones, 131
 furans to enones, mediated by iodotrimethylsilane, 2727
 Grignard reagent to N,N-diethylsorbamide, 5089
 Grignard reagents to O-trimethylsilylated cyanohydrins, 4075
 halophenylcarbenes to alkenes, rate constants, 5313
 Hammett analysis of absolute carbene addition rate constants, 685
 HF to 1-phenyl-9-azabicyclo[6.1.0]nonane to give fluoroamines, 5877
 higher order cuprates and α,β unsaturated esters, 127
 hydroxymethylanthracene and N-ethylmaleimide, selectivity in aqueous solns and suspensions, 1901
 intramolecular and intermolecular, benzoyl and substituted benzoyl radicals to nitroaromatic compds, 669
 intramolecular conjugate, route to trans-hydrindane systems, 3819
 intramolecular, β -ketoesters to unsaturated enones and esters, 465
 lactones to 1-methoxy-1-buten-3-yne, 4551
 ligand effects in enantioface differentiating 1,4-addition to 1,3-diphenyl-2-propen-1-one, 3513
 lithium anion of 2-(1-E-propenyl)-1,3-dithiane to 2-methylcyclo-2-en-1-one, 1859
 lithium organocuprates to N,N-diethylsorbamide, 5089
 methanol to endo-tricyclo-[3.2.1.0^{2,5}]-oct-6-ene, 307
 methyl propynoate and 2,3,5-tris(methylene)nobornane, 1497
 methyl- and ethyl-vinylketenes to olefins, 4817
 Michael, SAMP/RAMP-hydrzones to α,β -unsaturated esters, 4967
 nitronate anions to ethylene ketal of 2-carbomethoxy-2-cyclopentenone, 647
 non-stereospecific, $:CBr_2$, to styrene and fumaronitrile, 3799
 nucleophiles to bicyclo[2.2.1]hepta-2,5-diene, photoinduced, 19
 nucleophilic radicals and alkenes, 703
 organometallic reagents to (R)-2,3-isopropylidene glyceraldehyde, steric course, 2843
 ortho-lithiated oxazolines to aldehydes and ketones, 1437
 phenoxylchlorocarbene, philicity towards styrenes, 2719
 phenylphosphane to 1,2-diethynylbenzene, $KOH/[18]-crown-6$ catalysed, 2545
 phenylsulphenyl chloride to α -diazoketones, 117
 photo dimerisation of N-benzyl-1,4-dihydronicotinamide, 5399
 photo of neutral methanol to phenylallenes, 1107
 propiolic acid to $MeMgI$, 3973
 pyrrole, indole and N-Me derivs, and furan, addition of 4,6-dinitrobenzofuroxan, 2255
 regioselective trans addition, 2-methyl-2-propanethiol to primary, sec and tert 1-alkyn-ols, 61
 selective Grignard-type carbonyl addition of alkenyl halides mediated by $CrCl_2$, 5281
 singlet oxygen to dienes, 4291
 stabilised carbanions to iodolactones, 2889
 stereoselective axial, ethynyl carbanions to CO of cyclohexenones, 4887
 substituted α -bromoketones and $SiMe_3Cl$, 4207
 substituted benzoquinone-diene carboxylate adducts via tandem Michael reactions, 3807
 trichlorogermane and N,N diacetate of uracil or 5-fluorouracil, 1707
 trimethylsilyl cyanide to α -substituted ketones, effect of catalyst, 4559
 tris(trimethylsilyl)aluminium, and α,β -unsaturated carbonyl compds, 45
 unsaturated ketones and thioenolates, C-versus S-1,4-addition of disubstituted dithioesters thioenolates, 4203
 vacillating reactions, suspension of H_2CrO_4/SiO_2 plus $NaBD_4/Al_2O_3$ and 1-dodecanol, 689
 vinyl cuprate to carbohydrate derived enones and α,β -unsaturated esters, stereochemistry, 2231
- Alcohols**
 acyclic allylic alcohols, transition state of m-chloroperbenzoic acid epoxidation, 5421
 alkylbenzene carbinols by irradiation of alkyl-benzenes with alcoholic moieties, 3439
 allenylcarbinols from alkoxides, 5665
 allyl, coupling with Grignard reagents using 1-chloro-2-methyl-N,N-tetramethylenepropenylamine, 5745
 allylic alcohols, conversion into α -methylene- γ,δ -unsaturated esters, 1239
 allylic from aldehydes, 5281
 allylic systems, stereochemistry of osmium tetroxide oxidation, empirical rule and examples, 3943, 3947
 benzyl and acylolins, effective catalyst for air oxidation, 2399
 benzyl, metallation with two equivs of n-BuLi, 1233
 catalytic isomerisation of β -trimethylsilylallyl alcohols, 3851
 chloral, reaction with α -acetylcyclopentanone, revision, 2393
 enantiomeric composition and absolute configuration of 2,3-deuterated 3-alkylpropanols, 5257
 epimerisation, (1R,4S)-2-endo-hydroxy-10,10-dinitrofenchane, basic treatment to (1R,4S)-2-exo-hydroxy-10,10-dinitrofenchane, participation of 10,10-dinitro group, 3907
 erythro homoallyl alcohols, by addition of γ -substituted allylsilanes to aldehydes, 2865
 from benzyltrimethylsilane addition to aldehydes and ketones, 4217
 from methylenecyclopropyllithium and carbonyl electrophiles, 1467
 functionalised syn-1,3,5,7-tetraol deriv, synthesis, 3873
 homoallylic, from benzaldehyde and 3-phenylpropen-1-yl magnesium chloride, 1427
 isomerisation of β -trimethylsilylallyl alcohols, Rh catalysed, 2787
 methylenecyclopropylcarbinols, reaction with formic acid, 2347
 methylthiomethyl ethers of alcohols, cleavage, 4485
 moenocinol, synthesis from isoprenoid precursors, 5201
 on hindered and sensitive alcohols, mild placement of protecting group, 5709
 optically active α -benzyloxy alcohols, synthesis, 2843
 optically active, prep from chiral acetals and organoaluminium reagents, 4581
 oxidation by chlorotrimethylsilane-chromium to carbonyl compds, 4367
 oxidation of α -dialkylaminobenzyl alcohols by MnO_2 to 1,4-dihydro-1-alkyl-2H-3,1-benzoxazine, 2213
 polyacetylene alcohol, triacenta-4,15,26-triene-1,12,18,29-tetraene-3,14,17,28-tetraol, inhibitor of cell division in sea urchin eggs, 2771
 preparation of β -aminoethyl alcohols, potential intermediates, 4235
 preparation of (Z)-4-(trimethylsilyl)-3-buten-2-ol, 4295
 primary allylic, isomerisation to tertiary by means of $Me_3SiOOSiMe_3-VO(acac)_2$ catalyst, 3741
 reaction with N-vinyl-2-ethoxy-pyrrolidiniminium tetrafluoroborate, 2091
 rearrangement of allylic-selenides to allylic alcohols, 1213
 regioselective trans addition, 2-methyl-2-propanethiol to primary, sec and tert 1-alkyn-ols, 61
 secondary, oxidation using $VO(acac)_2-tBuOOH$, 5009
 side chain of α -tocopherol, synthesis using chiral propionate synthon, 1235
 stereoselective synthesis, 1,2-O

- dialkyl-3-O- β -D-glycosyl-sn-glycerols, 1229
- stereospecific synthesis, (S)-2-[²H₅]methyl-2-methylbutanol, 831
- substituted homoallyl alcohols, Z-selective formation, 3209
- tertiary and benzyl alcohols with γ -trialkyl tin group, formation of cyclopropanes with inversion of config at both C-atoms, 4591
- tertiary, thermolysis, relationship between ΔG^\ddagger and strain energy, 1161
- transition-metal oxidation to aldehydes and ketones, 2185
- tricyanohydrines, prep and use in prep of β -aminoethyl alcohols, 4335
- Aldehydes**
- addition of 4-substituted allylboronates, Z-preference to homoallyl alcohols, 3209
- adducts with 1-lithio-1-benzene-sulphonyl-2-trimethylsilyl-ethane, prep of trans-3-(trimethylsilyl) allyl alcohols and trans-4-(trimethylsilyl)-3-alken-1-ols, 2371
- aliphatic and aromatic, prep of Z- α,β -unsaturated esters, 4405
- allylation via allyl enol carbonates, Pd catalysis, 1793
- and methylals synthetic application of phenylthio- and phenylsulphonylmethyl ethers, 4993
- aromatic aldehydes added to (R,R)-2-t-butyl-1-aza-3-oxa-7-thia-bicyclo[3.3.0]octan-4-one, 3315
- aromatic and aliphatic, aldol reaction with α -stannyl ketones, 3347
- aromatic, NOE difference spectra, CO group, s-trans to o-position of highest double bond character, 2367
- benzaldehyde, hydroxylation with H₂O₂ in SbF₅-HF, 3095
- benzaldehyde, reaction with 3-phenylpropen-1-yl magnesium chloride, 1427
- by conversion of nitro-olefins, 417
- carboxylic ester to carboxaldehyde using methythiomethyl p-tolyl sulphone, 5761
- chemoselective reduction of aldehyde and ketone and between aldehydes with borohydride, 5367
- chloral, reaction with α -acetylcyclopentanone, revision, 2393
- condensation of aryl aldehydes with succinic anhydride, 2211
- condensation with anions generated α -to dimesitylboron group, 635
- condensation with lithiated allylic sulphones leads to E,E-2-arene-sulphonyl 1,3-dienes, 4315
- conversion of alkenes to γ,δ -unsaturated aldehydes via allyl vinyl ethers, 4423
- cyclocondensation with siloxy-dienes, 3451
- deoxygenation, by reaction with dibromocarbene and formation of CO, 2829
- dialkylphosphonates, reaction with α -nitrobenzaldehyde formation of C-P bond, 5899
- direct conversion to α,β -unsaturated carboxylic esters, 2599
- enamine carbaldehydes, photocycloaddition of alkenes, 3579
- formation of 6-amino-3-cyano-2(1H)pyridones from aldehyde derivs, 5073
- formation of pinacols from, mediated by samarium diiodide, 765
- from alcohols by means of Me₃SiOOSiMe₃, 2185
- from carboxylic acids, direct and chemoselective, 1543
- glutaraldehyde, reaction with 1,3-dialkylureas in presence of water, 789
- heterocyclic synthesis using dialkyl 3-oxo-1-alkenyl-phosphonates, 5599
- homologation by novel reagent, 573
- key intermediates in synthesis of LTB₄, synthesis of optically pure compds, 5285
- nucleophilic acylation, 4907
- of allyl vinyl ethers to γ,σ -unsaturated aldehydes, 4423
- optically active α -benzyloxy aldehydes, synthesis, 2843
- optically active, prep, 373
- organo compd derived from alkenyl halides, addition to aldehydes, 5281
- Pd catalysed prep of α,β -unsaturated aldehydes from saturated aldehydes via silyl enol ethers, 5635
- phenolic aldehydes, condensation with phosphonium salts, 193
- preparation and synthetic applications of 3-alkoxyacroleins, equivalent of malon-dialdehyde, 895
- preparation of S(+)-3-phenylbutanal, 585
- preparation of (R)- γ -hexanolid, (5R,6S,7S)-6,7-isopropylidendioxy- δ -octanolid and (+)-exo-brevicomlin, from carbohydrate-like chiral synthons, 3753
- preparation of 2-alkyl-2,3-dihydro- α -pyrones from 1-methoxy-1-buten-3-yne and aliphatic aldehydes, 5303
- preparation of gem-difluoroadducts, 4113
- preparation, β -ketoaldehydes, 419
- reaction of α -ketoaldehydes with nitroalkanes, 3063
- reaction with allylic arsonium ylides, 4419
- reaction with dialkyltelluronium allylide, 5109
- reaction with reagent from 1-chloro-3-iodoprop-1-ene and SnCl₂, 4009
- reaction with vinyl lithium derivs of enol ethers of diones and conversion to tetramic acids, 4751
- rearrangement of cyclopentane- and cyclohexane-carboxaldehyde to cyclohexanone and cyclopentylmethyl ketone, 4157
- reductive alkylation with borane-Me₂NH, 4951
- selective reduction with tetra-n-butylammonium triacetoxyborohydride, 4287
- stannic chloride mediated reaction of allylsilanes with chiral α - and β -alkoxy aldehydes, 4765
- stereoselective synthesis of 3-alkoxyacroleins, 5209
- sterically crowded, aldol reaction with cerium enolates, 5233
- synthesis from allylmesitylboranes, 631
- synthesis of γ -acetoxy- α,β -unsaturated esters from saturated aldehydes, 4525
- synthesis, (R)- α -acetoxyphenyl-acetaldehyde, 503
- trapping of γ -lactols in masked hydroxyaldehyde form, 3555
- trialkylaluminium reagents, reaction with 2,3-epoxyalcohols, synthesis of α -chiral aldehydes, 1377
- umpolung via radicals, CC bond formation, 3221
- Alkaloids**
- ajmaline and sarpagine, biogenetic link, 5197
- ajmaline, enzymatic formation from vomilenine, 2845
- aporphines, 11- and 10,11-substituted, synthesis, 2107
- balfourodendron phenolic, synthesis, 2359
- catharanthine, synthetic approach, 2927
- configuration relative to synthesis of (\pm)-mostuetine, 3627
- daphniphyllum, Diels-Alder strategy for synthesis, 2679
- deamination of indolenines, application to mesembrane series, 4983
- directed metalation of tertiary nicotinamides, synthesis of (\pm)-sesbanine, 2649
- diterpenoid, pentacycline structure, 959
- elaboration of benzo[e]indolizidine framework, new approach to gephyrotoxin, 2881
- electrochemical methoxylation of ergolines, revised product structure, 819
- ergolines, regiocontrolled electrochemical cyanation, 2841
- erymelanthine containing 16-azaerythranine skeleton, 5067
- fixation of N-configuration and prep of ephedrine boron derivs, 759
- gramine-derived bromo alkaloids from *Zoobotryon verticillatum*, 481
- incorporation of 7,8-oxygenated benzylisoquinoline into cularine, 5855
- incorporation, berberine into jatrorrhizine, 469
- indole, from *Martensia fragilis*, 2087
- indole, introduction of OH at C-14, 3861
- isolation and structure of chilenone A, 4063
- isoquinoline, puntarenine, 155
- jatrorrhizine, biosynthesis, 2643
- ladybug of adaline series, biomimetic synthesis, 2099
- limogine and himalayamine, 2445
- monoterpenic, precursors, synthesis, 4193
- morphinan skeleton, prep new method, 4653
- new diterpenoid from *Delphinium cardiogetalum*, structure of alkaloids, 3765
- new phenolic isocularine and benzylisoquinoline, biogenetic relationship, 2203
- novel biscarbazole, (\pm)-murrafoline structure, 5377
- olivacine and ellipticine, synthesis, 2189

- oxidation in aqueous soln induced by argon arc plasma, 4839
 oxocompostelline and oxocularine, structure and synthesis, 2295
 Papaveraceae, new class, ribasine structure, 2029
 partial synthesis of 14 α -hydroxy-rauneticine, 3861
 potential intermediates, prep of 2-alkyl indoles, 3531
 protoberberine system, new synthesis, 2063
 protoberberine, bharatamine, biogenetically derived from monoterpene precursor, 291
 pyrrolizidine, synthesis of (\pm)-otonecine, 5731
 regioselective alkylation of N²-methyl-9-hydroxyellipticinium acetate with N,O or S donors, 365
 ribasidine, structure and characterisation, 4481
 sceletium, rac-mesembranone, joubertinamine, and epijoubertinamine, synthesis, 551
 selagine ring system, regioselective synthesis of model, 699
 short synthesis of di- Δ^7 -mesembranone, 829
 stereochemistry and synthesis of (-)-vincatine, 2497
 stereoselective synthesis of *epi*-lupinine, 261
 stereoselective synthesis of (\pm)-conhydrine, (\pm)-ephedrine and (\pm)-N-methyephedrine, 4577
 synthesis of (\pm)-dihydro-desoxyatonecine, 4253
 synthesis of (\pm)-verbascenine, 3669
 synthesis of (\pm)-mesembrine and (\pm)-desdimethoxymesembrine from N-methyl-2-pyrrolidone, 4785
 synthesis of 17-oxoellipticine, 3831
 synthesis of deethylcatharanthine, 5539
 synthesis using organoiron complex, 5781
 synthesis, intramolecular ureidoselenation of double bonds, 1357
 synthesis, N₂-methyl secodine, 1845
 synthesis, new tool, coupling reactions of β -amino and β -acetamido radicals, 2051
 tobacco, via tertiary azides, 1937
 total synthesis of (\pm)-ribaline and (\pm)-ribalinidine, 2359
 total synthesis of (\pm)-decaline and (\pm)-vertaline, 2783
 total synthesis of O-methyl-pallidine, 4653
 transformation of protoberberines into benzindenoazepines, synthesis of (\pm)-fumaritrine, 3845
 ureidomercuration in synthesis of δ -coniceine, 11
 veratrum new reaction of [NaBH(OAc)₃], 273
 verbaskine, structure, 4381
- Alkanes**
 alkanes by reduction of thiranes, 1657
 dimerisation of benzylic radicals to 1,2-diarylethanes, 2219
 n-alkanes selective oxidation with lead tetracetate, 3891
 Ni catalysed intramolecular H-exchange in 2,3-dimethylbutane, 1119
 photooxidation by metal oxide
- semiconductors, 5071
- Alkenes**
 aliphatic, electrochemical conversion to conjugated nitro olefins, 4443
 alkene formation, reaction of aldehydes with oxido phosphonium ylides, 2477
 alkenes by reduction of thiranes, 1657
 alkenes substituted in α - or β -position by electron withdrawing group, formation of η^3 -allyl-palladium complexes, 4567
 alkenes, mono- and substituted, conversion to *trans*-vicinal diacetates, 4547
 alkyl and phenyl substituted, relative reactivities toward diphenylmethyl cation, 2155
 aza carbonyl functionalisation of olefins, 2051
 by debromination of 1,2-dibromides with poly(styrylmethylthiol), 3913
 by transformation of selenides using 2-sulphonyloxaziridine, 1213
 carbene olefin complexes and carbene philicity, 4763
 carbosulphenylation and carboselenylation, 5911
 catalysed synthesis of arylenes, 5449
cis- and *trans*-1-(2-anthranil)-3,3-dimethyl-1-butene, 'one way' photoisomerisation, 2873
cis-alkenes from *erythro* Horner-Wittig intermediates, 3931
 conversion of alkenes to allyl vinyl ethers, 4423
 conversion to γ,δ -unsaturated aldehydes via allyl vinyl ethers, 4423
 cycloaddition of keteneiminium salts to olefins, stepwise mechanism, 2251
 cyclobutanes and olefins, electron transfer induced interconversion, 5815
 electrophilic perchlorination, 1211
 enamine carbaldehydes, photocycloaddition of alkenes, 3579
 formation of 4-membered heterocycles, 3935
 halophenylcarbenes to alkenes, rate constants, 5313
 hydrogenolysis of vinylic sulphones to olefins, 4311
 maleic anhydride alternative, *trans*-1,2-bis(phenylsulphonyl)-ethylene, 1653
 mesoionic oxazolones to alkenes, 369
 mono and polycyclic olefins, synthesis, 1653
 new olefin cyclisation reagent, 2581
 nucleophilic displacement by alkenes at bivalent S and Se, comparison of transition states, 5299
 olefin oxygenation with tetrahydroborate and dioxygen catalysed by Rh-porphyrin, 1183
 olefin synthesis via fragmentation of hindered ester halides, 1475
 olefination of 1-alkoxy-2-(trimethylsilyl)-3-hydroxy moiety, 1997
 olefinic bond, altered by introduction of NO₂ group in olefinic
- C atom, 2795
 olefinic cyclisation, Beckmann rearrangement of oxime sulphonate, synthesis of di-muscone, 943
 olefins and α -chloro- α -keto sulphides, one-pot synthesis of γ -butyrolactones and 4,5-dihydrofurans, 1715
 olefins by dehydrohalogenation of alkyl bromides and iodides with tritylpotassium, 2449
 olefins via reductive debromination of vic-dibromides, 3001
 olefins, by reaction of carbonyl compds with α -trimethylsilyl-alkylphosphonates, 739
 olefins, catalytic hydrogenation by RhCl, and aliquat-336 under phase transfer conditions, 4139
 olefins, direct epoxidation by superoxide in presence of phosgene dimer, 3481
 oxidation to ketones, effect of phase transfer catalyst, 5159
 oxidative cleavage, *p*-substituted 1,1-diphenylethylenes, electronic effects in semiconductor photocatalysis, 547
 photo reactions of phospho alkenes, 1975
 preparation of tri-*t*-butylmethyl-ethene and tetra-*t*-butylethene, 4821
 pure E-alkenes by reduction of α -Ph₂P=O ketones, 5293
 reaction of primary amines with vic-halo-thiocyanato-alkenes to afford 2-amino-1,3-thiazoles, 5085
 reactivity of 1-*t*-butylthio-3-methoxy-1-alkenes towards metallating agents, 4825, 4829
 reduction by aziridinamines, 2343
 Satyev or Hofmann olefins, selective formation, 4331
 semiconductor photocatalysed cleavage of olefins, electronic effects, 547
 stereo- and regioselective synthesis, [2]-1-alkynyl-2-halo-1-alkenes, 735
 stereochemistry of cyclopropyne addition to *cis*- and *trans*-2-butene and to 1,3-butadiene, 5495
 strained olefins, sequential alkylation, vinylation or arylation and carbonylation, 813
 substituted ethenes and propenes, substituent effect on ¹³C-SCS, 5265
 substituted in α - or β -position by electron withdrawing group, formation of η^3 -allylpalladium complexes, 4567
 substituted olefins, by regioselective transformation of ketone, 979
 sulphur mediated alkylation of esters with alkenes, 1315
 synthesis by boron Wittig reaction, 635
 synthesis, 2-bromo- or 2-iodo-1-alkenes, 731
 tetrahydropyranyl ether of (E)-3-bromo-3-trimethyl-2-propen-1-ol, synthon for (E)- β -formylvinyl anion and cation, 2055
trans difluoroolefins, prep from chlorotrifluoro-ethylene, 5615
 tri-substituted, synthesis of *Z*- α -bisabolene, 111
 unactivated olefins, and nitrile

oxides, cycloaddition, 1337
ureidoallylation of double bonds, 1357

Alkynes

alkynes, catalytic hydrogenation by RhCl₃ and aliquat-336 under phase transfer conditions, 4139
alkynes, Ni(O)-mediated hydrocyanation and carbonylation with trimethylsilylisocyanide, 2073
alkynyl alanes, coupling with (propargyl acetate)dicobalt hexacarbonyl complexes to formed skipped (1,4)-diynes, 2239
carbocupration, prep of alkenyl copper reagents, 5081
carbometallation, preparation of vinyl copper reagents bearing trimethylsilyl moiety in allylic position, 5077
cycloaddition of N,N-diethylamino-propyne with 4-methylcyclopentenone, 1025
diacetylene reaction with 2-diazopropane, 1775
formation of 4-membered heterocycles, 3935
hydroesterification of alkynes to mono or diesters, 5691
isopropenylacetylene, Li deriv, reaction with Se or Te, 2203
methylenation with titanocene methylene-Zn complex, 2043
preparation of 1-methoxy-1-alken-3-yne, 1061
preparation, new 2,3- and 1,2,3-substituted buta-1, 3-dienes from 1,4-dichlorobutene, 445
reaction of B-bromo- or B-iodo-9-borabicyclo[3.3.1]nonane with 1-alkynes, 731
reactions with phosphonous dichloride, prep of phosphirenium salts, 643
reduction by aziridinamines, 2343
synthesis of γ -hydroxyacetylenes, 5121
unsymmetrical alkynes, hydroboration, 1433

Allenes

allylation of β -keto carboxylates followed by decarboxylation-allylation to 2,2-diallylated ketones, 3865
allylic methyl ethers by UV irradiation of tetra-, tri- or diphenylallene, in MeOH, 1107
allylic substrates, regio- and stereo-selective Pd catalysed amination, 2745
chiral dihydroxy allenes, prep via chiral epoxides, 5587
metallation followed by quenching, configuration of (S)- and (R)-allenes, 3939
synthesis, organocuprate reaction of 1,3-alkadien-2-yl phosphates, 1297
tetra and tri-phenylallene, intermediate vinylcarbenes on photoreactions, 2523
vinyl allenes, prep, 4691

Aluminium compounds

aromatic compds bridged on non adjacent carbons, use of tris(trimethylsilyl)aluminum etherate, 4895
diisobutylaluminum hydride reduction of oximes, 4711
tris(trimethylsilyl)aluminum

reaction with α,β -unsaturated carbonyl compds, 45

Amides

acrylamides, Pd and Hg substituted, cyclisation, 15
addition of Grignard reagents and lithium organo-cuprates, to N,N-diethylorbanamide, formation of γ,δ - and β,γ -ethylenic amides, 5089
amides and ureas, reaction with trifluoromethanesulphonic anhydride to new resonance stabilised dicarbonium salts, 3919
amides, thioamides and vinylogous amides, Csf desilylation of derived immonium salts, 4303
anodic preparation of α -methoxylated amides and reaction with arylhydrazines, 1259
aromatic tertiary, annelation via 2-azaisobenzofurans as intermediates, 2945
by conversion of thioamides, 1323
conversion of N,N-dimethylamides N-methyl-N-succinimidomethylamides, 2685
cyclisation of N-alkyl-(E)-stilbene-2-carboxamides, 1319
cyclocondensation of DMF with α -haloamides, 4473
dimethylamides from reaction of mandelic acid with aminoazirine, 1921
dipoles, stacking as alternative to chiral recognition rationales, 5707
erythroselective aldol condensation of 4-acyl-2,3-dihydro-4H-1,4-benzothiazine and 10-acylphenothiazine, 3883
intermediate α -chloroamides in formation of ketones from α -chloronitriles, 5687
intramolecular rearrangement of sulphoramidate to carboxamide, 3137
lithiated tert-benzamides, α -amination, route to anthranil amides, 3795
lithium diisopropylamide reaction with N,N-dialkyl-pyridyl-carboxylic amide, 4735
nucleophilic substitution of 3-halogeno- λ^3 -phosphorins, with alkali metal amides, 5055
ortho lithiation of N,N,N',N'-tetramethylphenylphosphonic diamide, 2039
primary, conversion to active acylating agents, 1569
regio- and stereospecific synthesis of N-allyl amides, 295
secondary, reduction to carbinol-amine ethers and imines, 5165
stereoselective, of 3-oxo amides with zinc borohydride, 5385
synthesis of cyclic barbinolamide moiety of maytansinoids, 3065
trialkylsilyloxybenzamides, rearrangement to salicylamides, 4515

Amidines

benzoquinazoline derivs from N-naphthyl substituted amidines, 4351
synthesis and characterisation of N²(N-methyl-2-pyrrolidine amidine)2'-deoxyadenosine, new deoxynucleoside protecting group, 2953

Amines

acylation with t-butyl amino-carbonate, 231
addition to 3-homochromone and 6-bromofurochromone, ring contraction of pyrone ring, 3435
aliphatic, flame induced oxidation in aqueous soln, 3357
alkylamines, protonated, relative stabilisations, 2537
amination of organolithiums with MeLi-complexes of N-substituted methoxyamines, 561
amine assisted photohalogenation of halo aromatic hydrocarbons, 5673
aminoarenes, Pt-catalysed reduction with CO and water, 4121
aminocyclohexane conformation using ¹⁵N NMR, 4519
aminolysis of p-nitrophenylacetate in alkylamine bis(dodecaoate)-benzene system, 2917
anilines, sodium perborate oxidation to nitroarenes, 1505
anilinoacetates, synthesis of quinolines, 517
application of 't-amino effect' in heterocyclics, 3923
aromatic, diazotisation catalysed by IFPB ion, 4703
benzoyl peroxide, reaction with N,N-dimethylaniline, 1459
by catalytic transfer hydrogenation of azides, 1609
carbanions with negative charge at position α to N of N-acylamines, use in stereoselective synthesis of conhydrine, ephedrine and N-methylphedrine, 4577
condensation of rac-2-norbornanone and chiral α -phenylethylamine, correction, 2999
cyclisation of secondary γ - and δ -allenic amines, 3997
cyclohexanespiro compds from 1-aminocyclohexenes and phenyl-carbamoyldiimide, 2909
electrophiles, reaction with (butadiin)diamine, 2165
enantioselective alkylation of cyclohexanone, by erythro-2-methoxyl,2-diphenylethylamine, 511
enantioselective synthesis of D-erythro-sphingosine, 5491
formylation of Grignard reagents with N-formyl amines, 1143
from imines by cluster [Fe₃(SR)₄]³⁻, reductions, 5113
introduction of ortho amino groups into aromatic compds, 4733
lithiated tert-benzamides, α -amination, route to anthranil amides, 3795
micelle enhanced oxidation of amines by coenzyme, PQQ, 3465
monoacylated diamines, biologically important, synthesis, 5211
mycosporine reduced glutamine and glucoside, isolation and structure, 65
N-alkylation, application of ultrasound, 5907
new radical amination of β -naphthol, 1601
nucleophiles, addition to diphosphorylalkynes, 1679
ortho metallation directed by α -aromatic alkoxides, 5465
oxidation of β -naphthylamine with potassium super oxide, 3159
oxymorphamine, 6a and 6b epimers,

- solution conformation, 4801
 phenolcarboxamines, synthesis, 1031
 photocyclisation of N-benzoylformyl-N-(phenylthiocarbonyl)-amines, involving 1,4-phenylthio migration, 1169
 polar influences and application to proton affinity, empirical quantification, 2541
 preparation of *cis*-2-fluoro-2-phenylcyclooctylamine and C-6-fluoro-C-2-phenylcyclooctyl-r-1-amine, 5877
 primary amines by reduction of azides, 763
 primary, reaction with *vic*-halothiocyanato alkenes to afford 2-amino-1,3-thiazoles, 5085
 primary, secondary and optically active, reaction with ethinyl-diphenylphosphine oxide, 5865
 primary, secondary and tertiary arylamines, direct formation of Meisenheimer complexes, 1555
 quinoninium salts and amino quinone methide, 3567
 ring expansion of N-chloro-N-cyclobutyl-3,4-dimethoxyphenethylamine via Ag ion, to pyrrolidine, 1883
 secondary allylamines, synthesis via N-alkyl- β -aminoethylphosphonium salts, 3043
 secondary amines, reaction with 1-halo- and 1,4-dihalotriquinacenes, 4563
 secondary from oximes, 4711
 secondary prep of β -cyanoethyl monochlorophosphamidites, phosphorylation of protected nucleosides, 5843
 spermine oxidation product, 1,5-diazabicyclo[4.3.0]nonane, 1559
 synthesis of E-4-amino-2-alken-1-ol derivs, 2745
 synthesis of 2-chloromethyl-2,3-dihydro-benzo-1,4-thiazines from N-allylanilines and SCl₂, 3203
 synthesis of 3-amino-2-alkenenitriles by Cross Thorpe reaction, 3509
 synthesis, N-ethoxycarbonyl α -amino ketones, 593
 tertiary, formation of ethylene acyl cyanide enolates, 2847
 tertiary, R-N(CH₂R¹)₂, by reaction of 1,5,3-perhydropyridazepines with R'MgX, 1597
 tertiary, rapid nitrosamine, formation, 4271
 tertiary, reaction of chloroformates, competitive N-demethylation, deamination, N-debenzylation and N-deallylation, 3233
 transformation of N-(3,4,4-trichloro-3-buten-1-ynyl)anilines into butadiynes with two different amino groups, 2165
 unsaturated acyclic, diastereoselective synthesis, 987
- Amino acids**
 absolute configuration of (-)-S-(2-carboxypropyl)-L-cysteine, 1133
 alpha disubstituted acids, substitution using Schiff bases between monosubstituted amino acids and (S,S,S) or (R,R,R)-2-hydroxyproline-3-one as chiral agent, 3721
 amino acid and related anions, lipophilic tetramine as carrier, 1519
 amino acid constituent of bleomycin, enantioselective synthesis of (2S,3S,4R)-4-amino-3-hydroxy-2-methylpentanoic acid, 4805
 amino acid sequence of HC-toxin, 5309
 aromatisation of prephenate, aroenate and spiro-aroenate, 2815
 azlactones from α -amino acid derivs, addition to fumaric diester or dinitrile, 189
 bicyclic diastereoselective synthesis via ring contraction of α -chlorolactams, 5339
 chiral copper complexes, use of (2S,4R)-hydroxyproline derivs as ligands, 3517
 chlamydocin synthesis via 2-amino-8-oxo-9,10-epoxydecanoic acid, 5305
 convenient synthesis of alkyl β -aminocarboxylates, 913
 conversion into α -diketones, 2375
 cysteine deriv, α -alkylation without racemisation and without using chiral auxiliary, 3311, 3315
 dehydrooligopeptides, synthesis using ANCA as building block of α -dehydroamino acid residue, 2175
 diastereomers of L-methionine S₂R-sulphoximine, quantitative separation and analysis, 1471
 disubstituted proline derivs, new access, 5343
 enantiomeric mixtures of amino acids and (oxy)carboxylic acid, separation in aqueous soln, 3141
 enantioselective substitution using Schiff bases between α -mono substituted amino acids and (S,S,S) or (R,R,R)-2-hydroxyproline-3-one as chiral reagent, 3721
 flame induced oxidation of, aliphatic amines to amino acids, 3357
 fluorodeamination of α -amino esters to β -fluoro esters, 57
 glutathione, cysteinglycine and cysteine, reaction with tetrahydro-7E,9Z-leukotriene A methyl ester, 2135
 intramolecular condensation of N-homopiperonyl-N-dialkylphosphoryl glycine, 1617
 iodo, bromo or tosyl amino acids, reaction with R₂CuLi, without configurational change, 3717
 isolation and structure of acromelic acid A and B, 939
 new preparation of N-(nucleosidyl)- α -amino acids using trioctylmethylammonium salts of α -amino acids, 3571
 new synthesis of tetrahydro- β -carboline from 1,2-diprenyl-tryptamine deriv, 2171
 optically active 2-aminophosphinic and phosphonic acid from 2-amino alcohols, 2935
 optically active azetidino-2-ones from L-threonine, 1037
 organocuprate, reaction with iodo, bromo- or tosyl amino acids, 3717
 oxidation in aqueous soln induced by argon arc plasma, 4839
 preparation of β -benzyloxyamino-carboxylates and conversion to β -lactams, 4707
 preparation of α -disubstituted amino acids, 3721
 proline derived mesoionic synthon, 1067
 racemic coronamic acid, new synthesis, 3839
 racemisation of α -amino acids in presence of aldehydes, 4457
 resolution, by intermolecular NH...O=C hydrogen bonds functioning as chiroselective complexation, 1509
 simultaneous selective coupling, units to OH group of amino acid containing peptides to O-glycopeptides, 1759
 stacking of N-acylated amino acid esters as alternative to H-bonds in chiral recognition rationales, 5707
 synthesis of α -allokainic acid, 3427
 synthesis of (\pm)-phosphinothricine, 2391
 synthesis of (2R,3R)phenylalanine-2,3-d₂ and application to confirmation of gramicidin S, 3737
 synthesis of 2-chloro- and 2-homo-L-tryptophan, 5555
 synthesis of D,L-phosphotryptophan, 5461
 synthesis of dihydrophenylalanine derivs by Pd arylation of 2-acetamidocrylic acid, 4603
 synthesis of L-tryptophan, from L-proline, 1259
 synthesis of peptides by reaction of amino acids with oxallates, 4451
 threonine conversion to allo-threonine derivs, 3311
 transamination by pyridoxal model incorporated into cationic micelle, 2403
 triprotected DL- β -carboxyaspartic acid deriv, synthesis of asac-containing peptides, 1671
 tryptophane, conversion to methyl ester of lysergic acid, 859
- Amino sugars**
 synthesis of methyl α , β -aminofluoro-deoxy-pyranosides from N,N-diallylamino sugars, 5619
 total synthesis of (\pm)-ristosamine and (\pm)-megalosamine, 4637
- Analysis**
 quantitative separation and analysis, diastereomers of L-methionine-S₂R-sulphoximine, 1471
- Annulations**
 controlled 'criss cross' annulation, synthesis of medium sized ketolactams, 4253
 new annulations of aromatic rings, 3533
 new method for ring formation leading to cyclopentanol systems, 2821
 of benzene, phenol, catechol, resorcinol and pyrogallol, 4939
 synthesis of pyrrolizidine and indolizidine nuclei by 'criss cross' annulation, 4249
 Zwitterion of 2,2'-biallyl, use in tandem annulations, 1129
- Annulenes**
 bisdehydro[13]annulene system as terminal groups in butatrienes, synthesis and properties, 2861

- dioxygen bridged [18]annulene, diatropic and twisted perimeter, 1045
- hendecafulvadienes, synthesis and electrocyclisation, 2151
- Anthocyanins**
- diacylated, structure of platyconin, 2181
- malonylawobanin structure, 4863
- succinyl anthocyanin of *Centaurea cyanis*, structure, 5749
- Antibiotics**
- absolute configuration and synthesis of (-)-oudemansin, 2009
- amino acid constituent of bleomycin, enantioselective synthesis, 4805
- anamycins, synthesis of naphthalene core of streptovaricin D, 269
- anthracycline precursors, new synthesis, 257
- anthracyclinone derivs, optically active, racemisation mechanism for α -hydroxy ketone moiety (C₃-position), 2589
- antitumor, synthesis of 11-deoxydoxorubicin, 4809
- apramycin and analogs, synthesis, 4867
- bafilomycins, structure, 5193
- bicyclomycin series, rearrangement, 5607
- bromination of 3-methyl-2-thiacephem, 3283
- cadequomycin, synthesis, 3647, 4793
- carzinophilin A, synthesis of optically active C.1-C.18 segment, 1175
- cerulenin, inhibition of fatty acid synthetase, mechanism, 2673
- chiral fragments C₁-C₃ of erythronolide A, synthesis, 3395
- cyclopentanoid (\pm)-pentenomycin from 3-hydroxymethyl-2-methylfuran, 965
- cyclopentanoid (-)-pentenomycin 1 from D-(-)-quinic acid, 965
- daunomycin and adriamycin, new precursors, synthesis, 257
- diastereoselective synthesis of trichoverrol B, 3693
- diazquinomycins A and B, structures, 3643
- Diels-Alder regioselectivity, control by remote substituents, synthesis of anthracycline precursors, 1497
- erythromycin from D-glucose, sterecontrolled synthesis of segment with six chiral centers, 3635
- flexible approach, synthesis of 4-demethoxydaunomycinone and 4-demethoxy-11-deoxydaunomycinone, 1093
- fosfazinomycins A and B, structures, 2283
- from *Siphonaria diemenensis*, 1917
- griseusins, revised absolute configuration, 389
- intermediate for 4-demethoxyanthracyclinone synthesis, 2319, 5623
- intermediates of erythromycin biogenesis, 5527
- intramolecular carbenoid addition route to spiro-cyclopropaneindol-7-one ring system of antibiotic CC-1065, 4773
- ionophore, potential intermediates in synthesis, 2889
- kanamycin A derivs, fluorination, 1763
- key intermediates for (+)-PS-5, (+)-PS-6 and (+)-thienamycin, synthesis, 217
- lepiochlorin, short synthesis, 3959
- macrolide and polyether, synthesis from D-glucose via stereoselective hydroboration, 1987
- maytansinoids, synthesis of cyclic barbinolamide moiety, 3065
- miharamycin A and B, structures, 1805
- moenocinol, synthesis from isopenoid precursors, 5201
- neplanocin A, prep of optically active cyclopentene moiety from D-ribose, 4051
- nucleoside antibiotic, oxanosine synthesis, 931
- nucleoside, dapiramicin A structure, 495
- oleanomycin and lankamycin, chiral fragments, synthesis, 1311
- oliviv, synthesis, 2227
- oxotomaymycin conversion to tomaymycin, 5165
- pectinatone from *Siphonaria pectinata*, 3055
- penicillin derived S-compounds, formation of 4-acyldithioazetid-2-ones, 1627
- penicillin derived sulfoxides thermolysis to 4-acyldithioazetid-2-ones, 1623
- pentalenolactone E and F, synthesis via biogenetic like cyclisation of humulene, 3851
- pholipomycin, structure, 499
- polyene macrolide pimarinic, synthesis of two chiral fragments, C 1-11 and C 12-25, 3059
- polyoxo, synthesis of RCHMe. CHOH. CHMe. R¹ with three consecutive chiral centers, 2661
- prep and antibacterial activity of (\pm)-8-demethoxy 7-episteffimycinone, 2761
- pseudomonic acid C, synthesis of precursor for chiral side chain, 3657, 3661
- pseudomonic acids, synthesis from arabinose, 3657, 3661
- pyrenophorin, synthesis of precursor, 4283
- quinone precursor, prep of 3,6-dimethoxybenzocyclobutenone, 1829
- regiospecific access to key 11-deoxyanthracycline intermediates, 2757
- rifamycin chromophore, synthesis, 2331
- sarkomycin synthesis, 647
- segment of ionophoric boromycin, chiral synthesis, 4539
- stereochemistry of piericidin A₁, revised, 5485
- stereoselective synthesis of (\pm)-blastomycinone and antimycin A₃, 2657
- synthesis and desulphurisation of 3-methyl-2-thiacephem-4-carboxylates, 1631
- synthesis of (S,S)-(+)-grahamimycin A₁, 287
- synthesis of (+) α -citromycinone, 1329
- synthesis of 3-oxa-5-carba analogs of β -lactam antibiotics, 335
- synthesis, 7,9-bisdeoxycarminomycinone from 5-hydroxy-quinizarin, 519
- total synthesis of (\pm)-bicyclomycin, 5627
- total synthesis of (-)-nephanoicin from D-(+)-ribonic acid γ -lactone, 5559
- trichoverritone and 16-hydroxyroridin L-2 from *Myrothecium roridum*, 3539
- two quasi isomorphous ionophores, M139603 and tetronomycin, soln structure and cation-binding, 3319
- virginiamycin M₂, construction of 1,3-oxazole moiety, 2287
- virginiamycin M₂, functionalisation of 2-Me group of 4-t-butoxycarbonyl-2-methyl-1,3-oxazole, 2291
- virginiamycin M, solution to oxazole problem, 4391
- with hypolipidemic and antitumor properties, (\pm)-ascufuranone synthesis, 1547
- Argon**
- oxidation in aqueous soln induced by argon arc plasma, 4839
- Aromaticity**
- aromatisation of prephenate, aroenate and spiroaroenate, 2815
- cycloaromatisation of enamines, 3051
- Arsenic and compounds**
- compound with P=As, phospho-arsene, isolation and characterisation, 3625
- Diels-Alder reactions of 1,3-benzoxaphospholes and 1,3-benzoxaarsoles with 2,3-dimethylbutadiene but cycloaddition with tetrachloro-o-benzoquinone, 5481
- preparation of 2-aryl-2,6-diaryl and 2-aryl-4-R¹-arsenine, 4079
- stable diarsene (Me₃Si)₂C=As=As-C(SiMe₃)₂, synthesis, 2769
- treatment of 1-aryl-4-hydroxy-1,4-dihydroarsenins with acid, 4079
- Asymmetric synthesis and asymmetric induction**
- alkylation of esters via lithium enolates, 3213
- chiral fragments C₁-C₃ of erythronolide A, synthesis, 3395
- chiral induction in cyclocondensation of aldehydes with siloxydienes, 3451
- complete 1,6-asymmetric induction, synthesis of β -substituted α -ketoesters, 4967
- coordinated MeCu.BF₄ to chiral enolates, asymmetric 1,4-additions, 4971
- Diels-Alder reaction of chiral allenic ester, synthesis of (-)- β -santalene, 4665
- efficient 1,3-induction, reduction of α -subst- β -ketosulphoxides, 503
- enantiomerically pure alkyl-acrylates, Ni(o)-catalysed cycloadditions with methylene-cyclopropane giving 3-methylene-cyclopentane carboxylic acid alkyl esters, 3599
- enantioselective substitution using Schiff bases between α -mono substituted amino acids and (S,S) or (R,R,R,-2-hydroxypinan-3-one asa chiral reagent, 3721

- hydrosilylation, prep of optically active cyclic allylsilanes, 5661
induction, cycloaddition of 2,3-dimethyl-1,3-butadiene with chiral, camphor or sulphoximino sulphines, 2035
intramolecular protodesilylation, allyl silanes, 1,3- and 1,4-asymmetric induction, 569
Michael addition of chiral ester-dienolate, 4975
nitrile oxide to 3-butene-1,2-diol and derivs, 5501
of alpha disubstituted amino acids, 3721
of carbonyl protected α -hydroxy-aldehydes, by reduction of β -oxosulphoxides prepared by acylation of *p*-tolylthiomethyl sulphoxide, 817
Pd catalysed Grignard cross coupling, prep of optically active propargylsilane, 807
reduction of prochiral ketones with chiral silane(III), 1573
- Aza compounds**
alkynyl azacycloalkanes, synthesis, 1719
aza analog of LTA_x, synthesis, 331
formation of 1,3,2-diazaphosphole derivs, 2137
N-vinyl-iminium salts from substituted 2-azabutadienes, 581
photo rearrangement of 3-aza-1,2,2,4,4-pentaphenylbut-3-en-1-one, 1089
synthesis, 12-azacarboprostacyclin analogs, 477
- Azepines**
reaction of nitrene with LH-azepine deriv, 2275
reaction of 1,5,3-perhydroazepines with R¹MgX to give tertiary amines R N(CH₂R¹)₃, 1597
- Azetidines**
cis- and *trans*-3-phenoxyacetamido-4-(2-acetoxy-1,1-dimethylethyl)azetid-2-ones, synthesis, 135
diastereoisomeric 4-acetylthio-3-acylamino-1-(α -triphenylphosphoranylidene)alkoxycarbonylmethylazetid-2-ones, contrasting thermal behaviour, 2501
enantioselective synthesis of (R)- and (S)-4-[(methoxycarbonyl)methyl]-2-azetid-2-ones from D-glyceraldehyde acetonide, 3009
optically active azetid-2-ones from L-threonine, 1037
preparation of 3-methylene-2-azetid-2-ones and conversion into 3-methylene-2-azetid-2-thiones, 3725
pulverised KOH, reaction with 3-bromo-2-bromomethylpropionamides gave 3-methylene-2-azetid-2-ones, and conversion to 3-methylene-2-azetid-2-thiones, 3725
synthesis of 2-acetylthio-4-oxoazetidines, 1429
synthesis of 1-hydroxyazetidines and conversion to 1,4-diacetoxy-2-azetid-2-ones, 825
synthesis of 2-methoxy- and 2-phenoxy-penems from 4-allyl sulphanylazetid-2-ones, 3373
synthesis of 3,3-dibromo-, *cis*-3-bromo and *cis* and *trans*-3-deutero-2-azetid-2-ones, 2323
synthesis of carbapenem-3-phosphonic acid derivs from 3-iodomethyl-2-oxoazetid-2-ones, 347
transformation, 4-iodomethylazetid-2-one into precursor for synthesis of carbapenem derivs, 3251
- Azides**
isopropylazide, ESR spectrum during heating, 3761
new dihydroquinolines, synthesis via azides, 3609
photolysis of 1-azido-4-methyl bicyclo[2.2.2]octane and 1-azidoadamantane in low temp matrices, 3887
reduction to amines by catalytic transfer hydrogenation, using ammonium formate, 1609
reduction to primary amines, general chemoselective method, 763
tertiary, synthesis of tobacco alkaloids, 1937
thermolysis of 1,3-dithiol-2-yl azides, 3729
vicinal O-protected azidohydrins, synthesis, 4189
- Aziridines**
aziridinamine reduction of alkenes and alkynes, 2343
cyclocondensation of DMF with aziridinone, 4473
electron-transfer photooxygenation of 1-butyl-2,3-diphenylaziridine, 3047
oxidation of selenides and seleno oxides to alkenes using 2-sulphonyl-oxaziridines, 1213
ring formation, reaction of quinoxalines and naphthyridines with α -halocarbanions, 3239
thermal decomp of *cis*- and *trans*-diphenylaziridinamine, 2339
- Azirines**
oxaphospholene deriv from 3,3-dimethyl-2-phenyl-1-azirine, 1837
- Azo compounds**
azoxy compds by transformation of N-mono-substituted hydroxylamines with Pd catalyst, 1049
benzylazobenzene α -hydroperoxides, substituted, epoxidation of 2,3-dimethyl-2-butene, 123
- Azulenes** see **Polycyclic aromatic compounds**
- Barrellenes** see **Polycyclic cycloalkanes**
- Benzazocines**
new route to 3-benzazocines, 413
- Benzene derivatives**
alkylbenzene carbinols by irradiation of alkyl-benzenes with alcoholic moieties, 3439
alkylbenzenes, photooxidation and dimerisation, 4275
arenes, hydrogenation by RhCl₃ and aliquat-336 under phase transfer conditions, 4139
arenes, synthesis from phenols by coupling aryl triflates with organocopper reagents, 2723
aromatic compds bridged on non adjacent carbons, use of tris-(trimethylsilyl)aluminum etherate, 4895
aromatic compds, introduction of ortho amino groups, 4733
benzene, Fe(III)-catalysed hydroxylation with H₂O₂ in presence of quinones, 4847
benzylation, use of PhCH₂SiMe₃, 4217
chloromethylation of aromatic compds, 1933
derivs, PhSeCl as chlorinating agent, 2077
dilithiation of tetrabromo-*o*- and *p*-dichlorobenzenes, 5725
electron-rich compds, site-selectivity in chlorination with N-chlorammonium salts, 3117
formation of butylbenzene from 1-chlorobenzvalene, 891
halo hydrocarbons, amine assisted photo dehalogenation, 5673
lithiated methoxymethoxybenzene, *o*-amination, 3795
methylated benzenes, reaction with 3-aryl-2-isoxazolines, 2279
non-stereospecific, addition of :CBr₂ to styrene, 3799
optically active K-region arene oxides, 4903
oxygen substituted aromatics, controlled introduction, 4939
pathways to *cis*-tris- δ -homobenzenes, 4099
reaction of trialkylboranes with α -azidostyrene, 3779
stilbene, first condensed tannins based on, 4147
styrenes, barrier to rotation, effect of α - and β -substituents, 1077
styrenes, philicity of phenoxy-chlorocarbene, 2719
synthesis of 1,2,3-trisubstituted benzenes, 4935
unsymmetrical bibenzyls, homomethylarenes and homopropargylarenes, synthesis, 3823
- Benzo-furans**
formation by pyrolysis of *o*-methoxybenzylidene chloride, 609
new synthesis of (\pm) lololide, 2247
- Benzoazoxines**
phytoalexin from carnation, 7-hydroxy-2-phenyl-4H-3,1-benzoxazin-4-one, 51
synthesis of 1,4-dihydro-1-alkyl-2H-3,1-benzoxazines, 2213
- Benzenes**
derived from aryl oxazolines, comments, 4935
reaction of polyhaloarenes as diaryne equivalents, dilithiation mechanism, 5721
substituted, and 1-methylene-isoquinolines, cyclisation, 2107
- Biogenesis**
ajmaline and sarpagine, biogenetic link, 5197
biogenetic relationship between phenolic isocoumarin and benzylisoquinoline alkaloids, 2303
citrethiolactone and citreopyrone relationship, 1053
conversion of humulene to pentalenolactone E and F, 3851
evidence for *trans*-(1 β -H:5 α -H)guanolid-9,69
intermediates of erythromycin

- biogenesis, 5527
 ladybug alkaloids of adaline series, 2099
 linear isoprenoids, stereoselective route, 5531
 of marticans from polyketide and tricarboxylic acid pathways, 4059
 pathway from ailanthone to shinjulactone, 4843
 precursor of steganas, synthesis, 3237
- Biologically active compounds**
 anticancer cembreoid, (\pm)-asperdiol synthesis, 2267
 ascofuranone with hypolipidemic and antitumor properties, 1547
 carba-prostaicyclin analog, 8-step synthesis, 5487
 compactin and mevlinol, studies in synthesis, 1373
 cytotoxic activity of new poly-oxygenated lanostane acids, 1081
 cytotoxic neolignans, d, l-megaphone, synthesis, 1125
 femoxetine, intermediate for synthesis, 5151
 hexasaccharide hapten of i blood group antigen, synthesis, 5223
 mammalian dolichols from plant polyprenols, 5103
 metabolites of arachidonic acid in mammalian blood platelets, identification of isomeric hydroxy-11,12-epoxides, 4913
 mutagenicity and cancerogenicity of electrophilic xenobiotics, 4491
 novel synthesis of (\pm)-prostaglandin D₂, 3125
 platelet activating factor congener, synthesis from diacetone glucose, 2741
 prostacyclin analog inhibition of platelet aggregation, 3493, 3497
 regiospecific alkylation of N²-methyl-9-hydroxyellipticinium acetate with N,O or S donors, 365
 rice plant, self defense against rice blast disease, 4715
 stereoselective synthesis of 13-azaprostacyclin methyl ester, 3121
 stereospecific route to 14S,15S-LTA₄, 4899
 synthesis of 5-acylamino benzimidazole-2-carbamates, 3155
 synthesis of milbemycins from avermectins, 5333
 synthesis of optically active 5-azaprostacyclin deriv in which enol ether is replaced by imino ether moiety, 3229
 total synthesis of (-)-nephanocin from D-(+)-ribonic acid γ -lactone, 5559
- Biosynthesis**
 bacteriochlorophyll a, 5703
 clavulones, 3169
 cularine, 5855
 geranyl pyrophosphate, role of phosphate residues, 4327
 jatrorrhizine alkaloid, 2643
 leukotriene, exclusion of hydroxy epoxide pathway, 4917
 of 3- and 4- deuterated shikimic acid, 4409
 of gibberellic acid inhibitors, 1941
 penicillin, potential intermediate, 2941
 potent inhibitors of thromboxane A₂, synthesis, 3291
- prostaglandin, inhibitory effect of arnebinol, 2407, 3247
 streptonigrin from [1-¹³C]-D-erythrose, 5445
- Boron and compounds**
 alkylidimesitylboranes, C-alkylation, 627
 alkynyl boranes for alkylation of oxiranes, 391
 alkynyl boranes, coupling with lactams, synthesis of alkynyl azacycloalkanes, 1719
 allyldimesitylborane reactions, synthesis of aldehydes and γ -lactol, 631
 borane amine complex modified by optically pure 2,2'-dihydroxy-6,6'-dimethylbiphenyl, for reduction of aromatic ketones, 1513
 borepin and valence isomers, ab initio calculations, 1863
 boron Wittig reaction, 635
 dimesitylboron group, properties and potential in syntheses, 623, 627, 631, 635, 637
 dimesitylborylmethanes, heteroatom substituted, 637
 dimethylboron bromide and diphenylboron bromide, acetal and ketal cleavage, 3969
 dimethylboron dibromide for C-O bond cleavage in ethers, 2969
 ephedrine derivs, prep and fixation of N-configuration, 759
 generation of tetra-n-butylammonium triacetoxo-borohydride, 4287
 haloboration, applications, 731, 735
 hydroborations, of unsymmetrical alkynes with dimesitylborane, 1433
 loss of P atom in 7-phosphano-bornene moiety of P-methylphosphole dimers, 5831
 new reaction of [NaBH(OAc)]₃, 273
 organoborane reagents, prep of 2,5-thiophene oligomers, 4043
 Pd catalysed reaction of (E)-1-alkenylboronic acid and (Z)- or (E)- 1-alkenyl iodides, 2513
 potassium enoxyborates, kinetic and thermodynamic, NMR, 1341
 reaction of B-bromo- or B-iodo-9-borabicyclo[3.3.1]nonane with 1-alkynes, 731
 sodium perborate, oxidation of aniline and sulphides, 1505
 tetrakis[3,5-bis(trifluoromethyl)phenyl]borate ion catalysis of diazotisation of aromatic amines, 4703
 trialkylboranes, mechanism of reaction with α -azidostyrene, 3779
 trityl tetrafluoroborate cyclodehydrogenation of α -(3,3-demethylallyl)phenols, 5801
- Cannabinoids**
 cannithrene-2, synthesis, 5419
 dibenzofuran cannabifuran, synthesis, 101
 tetrahydrocannabinols by terpenylation of olivetol with (+)-trans 2- and 3-carene epoxides, 3129
- Carbamates**
 active, synthesis using N,N'-disuccinimido carbonate, 4569
 addition of lithiated or titanated O-allyl carbamates to aldehydes and ketones, 1687
 photolysis, prep of 1-aza-bicyclobutanes, 4197
 synthesis of 5-acylamino benzimidazole-2-carbamates, 3155
- Carbanions**
 acetophenone N-ethoxycarbonyl-hydrazone dianion, reaction with carbonyl compds, 3239
 acetylations of basic and nucleophilic enolate anions with N-methoxy-N-methylacetamide, 1851
 acyl anion, use of tricyanohydrins, 4335
 acylation transfer reactions to aldehydes and ketones, 4907
 adjacent to sulphoxide, sulphone and sulphonium centres, theoretical examination, 4071
 allenic anions, configurational stability, 3939
 amino acid and related anions, lipophilic tetramine as carrier, 1519
 anions of t-butylacetothioacetate reaction with alkyl halides and carbonyl compds, intermediate, synthesis of carolic and carlosic acids, 5143
 carbanions of chloromethyl sulphonyl compds, H-substitution in benzothiazole, acridine and 1,2,4-triazines, 3277
 carbanions with negative charge at position α to N of N-acylamines, use in stereoselective synthesis of conhydrine, ephedrine and N-methyl-ephedrine, 4577
 closed shell anions tetrafluoroborate and perchlorate conducting complexes with (telluropyryl)-telluropyryls, 539
 coordination of carbocations with carbanions, C-C bond formations, 3299
 cyclofunctionalisation of N-3-cyclohexenyl-urethanes and -thiourethanes, 3979
 cyclopropane anion, disrotatory ring opening, 3225
 dianion of ethyl 4-(diethylphosphono)acetate as propionate homoenolate equivalent, 5453
 dibenzylidene-ethylene dianion, stereochemistry, 3985
 dithianylidene anions, application to synthesis of de-AB-8-carbomethoxycholestan-9-one, 1859
 E- and Z-allyl amides from dianions of β -(acylamino)alkylphosphine oxides, 295
 enolate anions from substituted α -phenylthio crotonate esters and their alkylation at α -C atom, 2113
 equivalent of 2-trimethylsilylvinyl anion in reaction with aldehydes, ketones and epoxides, 2371
 ethynyl, stereoselective axial addition to CO of cyclohexenones, 4887
 extended enolate anions from γ -phenylthio-crotonate esters and reaction with electrophiles, 3391
 formation of α -carbanions from dimesitylalkylboranes, 623
 generated from α -aminonitriles or protected cyanohydrines, alkylation, 4683
 generated from cyanohydrin, intramolecular alkylation, 3485

- generation of and ambident character of 9-anthranilylmethyl carbanions, 4645
 hydroxymethyl anion equivalent, 3165
 lactone synthesis via intramolecular alkylation of β -keto ester dianions, 253
 nitronate anions, additions to ethylene ketal of 2-carbomethoxy-2-cyclopentenone, 647
 octacyanotetramethylenecyclobutane dianion and anion radicals, synthesis, 1567
 phthalide anions, reaction with 3,4-dihydroisoquinolines, 2063
 polynuclear borane anions as mild reducing agents, 4955
 radical cations of polyfluoroaromatic compds, conversion to dihydroaromatic products in presence of fluoride and chloride anions, 4875
 reaction of S and Se with 1,3-benzodithiol-2-ylidenes carbenes, 2585
 reactions of 1-t-butylthio-1(Z)-alken-3-ols, 4825, 4829
 ring expansion of silacyclopentadienyl carbene to silabenzene, 4245
 selected, threefold substitution of benzene trioxide, pathway to *cis*-tris- δ -homobenzenes, 4099
 single synthon for (E)- β -formylvinyl anion and cation, 2055
 stable cyclopent[elazulenide, 4585
 stereochemistry of carbonation, of carbanions α -to chiral sulphoxide, 755
 stereochemistry of dibenzylidene-ethylene dianion, 3985
 structure and D-orbital effects of α -thiocarbanions $^{-}\text{CH}_2\text{SH}$ and $^{-}\text{CH}_2\text{SCH}_3$, 3789
 tricyanohydrines, prep and use as acyl anion, 4335
 zwitterion of 2,2'-biallyl, tandem annulations, 1129
- Carbazoles** see **Polycyclic heterocyclic compounds**
- Carbenes**
 absolute addition rate constants, Hammett analysis, 685
 acetonitrile, reaction with 1-naphthylcarbene to form nitrile ylid, 3955
 carbene olefin complexes and carbene philicity, 4763
 carcinogenicity of aza-polycyclic aromatic hydrocarbons, reactivity of tetrahydrobenzo ring epoxide derivs, 27
 chlorocarbenes, electronic effect on 1,2-H shift, 5713
 cycloadditions, steric effects, 881
 diphenylcarbene, chemistry in polycrystalline (S)-2-BuOH, 3689
 halocarbenes, H-migration, prep of (Z)-haloalkenes, 565
 halophenylcarbenes to alkenes, rate constants, 5313
 metal complexes, methylenedimagnesium as precursor, 3935
 new amphiphilic, α -cyclohexylidene-cyclobutylidene, addition and insertion reactions, 4199
 phenoxychlorocarbene, philicity towards styrenes, 2719
 reactions of mono- and bis-dibromocarbene adducts of *trans*- and *cis*-hexatriene with MeLi, 3205
 triplet ground state of di-t-butylcarbene, 485
 vinyl alkynylcarbenes, *trans*-positions and intermolecular reactions, 1779
 vinylidene carbene insertion into C-H bond of alkoxides, 5665
- Carbohydrates** see also **Amino sugars**
 anomerically allylated C-glycopyranosides and -furanosides, synthesis, 1563
 azobenzene-appended γ -cyclodextrin, prep, 5245
 chiral synthesis of 2,5-dideoxyribose, 4539
 condensation of equivalent of hydroxy-acetaldehyde, approach to vicinal polyols, 5869
 construction of neplanocin A, conversion of D-ribose to chiral 2-cyclopenten-1-one deriv, 4051
 functionalised D-fucose deriv, diastereoselective synthesis, 2227
 hexasaccharide hapten of i blood group antigen, synthesis, 5223
 ketoses, acylated, distribution of tautomers, ketoside synthesis, 361
 linkage site of acyl groups in disaccharide backbone of *E. coli* lipid A, 4017
 long-chain sugars, pseudo or authentic, synthesis, 5819
 methylenephosphonate sugars substituted at anomeric C, prep, 2631
 monosaccharide template, synthesis of novel PAF congener, 2741
 new synthetic method for 1-O-acyl- β -D-glucopyranoses using tri-O-trifluoroacetyl-1,6-anhydroglucose, synthesis of tuliposide-A, 2779
 oligosaccharides, characterisation by CID/MIKE spectrum and use of ionisation method MUSA-FAB, 2263
 preparation of phosphorylated disaccharides containing (R)-hydroxyacyl and (R)-3-acyloxyacyl groups, 2011
 pyranosidic homoligation, via secondary sites on pyranoside ring, 5823
 reaction of 4,6-O-benzylidene-3-O-mesyl-allyl with allylic Grignard reagents, 3505
 regioselective mono-O-alkylation of disaccharide glycosides, 2383
 silver triflate, reaction with β -2,3,4,6-tetra-O-benzyl-1-(2'-mercaptopyridyl)glucopyranose, formation of C-glycosides, 2715
 streptonigrin from [1- ^{13}C]-D-erythrose, 5445
 synthesis and conversion of C-(alkyn-1-yl)- β -D-glucopyranosides, 4833
 synthesis of (-)-litsenolides C₁ and C₂, use of D-ribonolactone, 5027
 synthesis of methyl α , β -amino fluoro-deoxy-pyranosides, from N,N-diallylamino sugars, 5619
 template synthesis from starch, approach to cyclodextrin, 3501
 trianhydride in hexitol series, prep from D-glucitol, 2557
 vinyl cuprate reagents, addition to carbohydrate derived enones and α , β -unsaturated esters, 2231
- Carbonates**
 allyl enol carbonates, conversion to α , β -unsaturated ketones, 1797
 allyl methyl carbonates, bimetallic catalysed reaction with enol acetates, synthesis of α , β -unsaturated ketones, 5639
 allylation of aldehydes and ketones via allyl enol carbonates, 1793
 allylic carbonates, allylation β -keto carboxylates, followed by decarboxylation-allylation to diallylated ketones, 3865
 hydrazinedithiocarbonate, reagent for removal of chloroacetyl and bromoacetyl protecting groups, 3775
 lithiated O-phenylcarbonate, α -amination, 3795
 preparation of active carbonates, ureas and nitrosoureas using N,N'-disuccinimido carbonate, 4569
 preparation of t-butyl amino-carbonate, 231
 stereochemistry of allylic C-O and C-C bond formation in Pd-catalysed decarboxylation of allylic carbonates and acetoacetates, 411
- Carbonium ions**
 carbocation intermediate in oxidation of 7-acetyl[4.2.1] and 7-acetyl[4.2.2]propellanes, 3639
 cationic enol ether-iron complexes, synthesis of protolichesterinic ester, 695
 chiral cyclohex-2-enone-4-cations, synthetic equivalent, resolution of 2-methoxytricarbonylcyclohexadienyliron hexafluorophosphate, 2491
 chlorination of 3- α -chloroestanyl-trimethylammonium cation by iodobenzenesulphonate anions, 5039
 Co stabilised propargyl cations, 2239
 coordination of carbocations with carbanions, C-C bond formations, 3299
 cyclisation onto aromatic systems using 1,3-benzodithiolium ions, 2939
 diphenylmethyl cation, relative reactivities with alkyl and phenyl substituted alkenes, 2155
 evidence from labelled acyl-carbenium ion of an oxo transfer reaction, 4911
 fulvalene dication, big-pyrimidal D_{4h} structure, stability, 1139
 intramolecular reactions of α -acylium ions with allyl and propargyl silanes, 1407
 new resonance stabilised dicarbonium salts, reaction of trifluoromethanesulphonic anhydride with carbonyl compds, 3919
 octafluoronaphthalene radical cations, generation and reaction with fluoride and chloride anions, 4875
 oxyallyl cation intermediate, substitution of fused chlorocyclobutanones, 1135
 prediction, α , α' , α'' , α''' -tetraalkylethylenechloronium and trimethylenchloronium ions,

- stability, 557
 proof that 2-norbornyl cations are anisotropic with regard to transmission of polar effects and that through space induction involves graded bridging, 3195
 quasi-molecular ion obtained by MESA-FAB method, CID/MIKE spectrum and characterisation of polar compds, 2263
 radical cations of ethene, ethine and cyclic ethers, prep, 2315
 rearrangements of 1,2-dimethyl- and 1,3-dimethyl-1-cyclobutyl cations, 1147
 single synthon for (E)- β -formylvinyl anion and cation, 2055
 synthesis of cyclohept[a]-azulenylm ion, 14 π electron system, 69
 tetra alkyl substituted cyclobutadiene radical cations, ESP, 639
 triphenylallenyl cation, generation and reaction with cyclopentadiene, 357
 triphenylmethyl cation in trifluoromethanesulphonic acid, reaction of carbocations, 71
 triphenylmethyl cation, reaction with fluoromethane sulphonic acid, 71
 two quasi isomorphous antibiotic ionophores, M139603 and tetronamycin, soln structure and cation-binding, 3319
- Carboxylic acids and anhydrides**
 acid chlorides and anhydrides, coupling of alkenyl copper reagents, 5081
 acyltetrone acids, synthesis, 5143
 alkenes by model NAD(P)H reduction of allylic acetates via activation of transition metal complexes, 3335
 alkylmagnesium bromide reaction with 7-oxa-bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic anhydride, formation of α -furyl- γ -ketoacids, 5519
 arylacetic acid dimerisation, 2219
 arylation of 2-acetamidocrylic acid by Pd catalyst systems, 4603
 aspartic acid, enantiodivergent alkylation, 2733
 benzoic acid and/or ester rearrangement, evidence for SET pathway, 3287
 benzohydroxamic acids, photochemistry, 5551
 benzoic acid by transformation of α -azobenzyl hydroperoxide, oxenoid intermediate, 3109
 benzyl halides carbonylated to arylacetic acids, 4005
 carboxamidomethyl esters as carboxyl protecting groups, 5219
 carboxyl protecting group in carbapenem systems, 139
 carboxyl protecting group, 9-fluorenylmethyl esters, 281
 carboxylic acids, conversion to aldehydes, 1543
 carboxylic acids, reaction with Grignard reagents prep of diaryl and alkyl-aryl ketones, 3677
 clausenidinaric acid, structure reassigned, 3773
 complexes of boron difluoride and 3-acyl tetramic acids, 4757
 conversion of trans to cis-cinnamic acids, 2965
 cyclopropanecarboxylic acid derivs, synthesis, 1255
 decarboxylation of E-3-phenyl-2-cyanopropenoic acid ester, 3825
 decarboxylation under mild conditions, 163
 derivatives of erythro α -hydroxy- β -methyl carboxylic acid, prep, 513
 diastereoselective synthesis, erythro- and threo-2-hydroxy-3-methyl-4-pentenoic acids, 729
 dienylacetic acids, functionalising, regio- and stereoselective, 5827
 enantioselective synthesis of (S)-(-)-citronellic acid, 4971
 esterification, new method, 3365
 esterification of (Z,E)-dienoic acid derivs without olefin isomerisation, 3693
 geminally functionalised heterocyclic aminocarboxylic acids, synthesis, 2193
 heterocyclic synthesis with allene-1, 3-dicarboxylic acids and esters, 597
 homogeneric acid, synthesis of (\pm) loliolide, 2247
 lanthanide(III) salts of (S)-carboxymethylloxysuccinic acid for separation of enantiomeric mixtures of amino acids and (oxy)carboxylic acids, 3141
 lipophilic crown carboxylic acids, physical and spectral data, 2923
 methyl ester lysergic acid, prep from tryptophane, 859
 ofefinic acids, new hydroxy lactonisation, 431
 optically active α -benzyloxy carboxylic acids, synthesis, 2843
 optically active pent-4-enoic acid derivs, prep, 4535
 oxidative decarboxylation of arylacetic acids by silver/persulphate, 2219
 paraconic acids, 4-substituted, synthesis, 2211
 phenoxyacetamido iso-azapenem and iso-azacephem carboxylic acids, synthesis, 1649
 phenylcamphoric acid, stereochemistry and epimerisation, 2441
 phthalide, photofragmentation in low temp matrices, 4373
 preparation of Z-3-iodoacrylic acid from propiolic acid and methylmagnesium iodide, 3973
 preparation of α -acetamidocinnamic acid with Z-configuration, 4603
 preparation of 2-(6-methoxy-2-naphthyl)propionic acid, synthesis, 1531
 reaction of N-substituted-2-isatinic acid with HNO₂, formation of indazolols, 3651
 sequential alkylation, vinylation or arylation and carbonylation of strained olefins, 813
 succinic acid derivs, prep from cyanohalides under PTC conditions, 4131
 symmetrical anhydrides, prep from acid chloride, 4195
 synthesis of α,ω -dicarboxylic acids and unsaturated carboxylic acids from silyl enol ethers, 4439
 synthesis of 3-acyl tetramic acids, 4751
 synthesis of 3- and 4- deuterated shikimic acid, 4409
 synthesis of alkyl β -amino carboxylates, 913
 synthesis of rac cis chrysanthemic acid intermediate in deltamethrine synthesis, 2103
 synthesis, (1R)-trans-chrysanthemic and (1R)-cis-dibromovinyl analog, 103
 synthesis, 3-oxa-1-azabicyclo-[4.2.0]octan-8-one-carboxylic acid salts, 335
 synthetic application of phenylthio- and phenylsulphonylmethyl ethers, 4993
 tetramic acids, bond migration during O-acylation, 4755
 transformation of 6-amino-penicillanic acid to penem deriv, 5111
- Carotenoids**
 mactraxanthin from edible surf clam, 911
- Catalysis**
 benzene, Fe(III)-catalysed hydroxylation with H₂O₂ in presence of quinones, 4847
 by hydrophilic crosslinked polymers carrying CO group of 4-piperidone type, prep, and hydration of α -aminonitriles, 1501
 effect on addition of trimethylsilyl cyanide to α -substituted ketones, 4559
 electrogenerated acid catalyst for transformation of epoxides to ketones and acetonides, 2857
 hydrogenation of olefins, acetylenes and arenes with RhCl₃ and aliquat- 336 under phase transfer conditions, 4139
 methyl ketones by oxidation of olefins, use Rh and Ru complexes for phase transfer catalysis, 5163
 Mg and Zn catalysed thio-ketalisation, 169
 micellar, in aqueous intermolecular Diels-Alder reaction, rate acceleration and selectivity, quassinoids, 1897
 Ni catalysed intramolecular H-exchange in saturated hydrocarbons, 1119
 oxidation to ketones, effect of phase transfer catalyst, 5159
 palladium dichloride - bisbenzotriazole catalysis, isomerisation of tertiary hexa-1,5-dien-3-ols substituted on C5, 1157
 Pd and phase transfer for conversion of trans- to cis-cinnamic acids, 2965
 Pd catalysed synthesis of carboxylic acids, esters and anhydrides, 813
 Pd phosphine and tin alkoxide catalysis, allylation of ketones via their enol acetates, 4713
 phase transfer catalysed desulphurisations, 5329
 phase transfer, introduction of axial chirality by quaternisation with 2,2'-bis(bromomethyl)-1,1'-binaphthyl, 1243
 primary allylic alcohols to tertiary by means of Me₃SiOOSiMe₃-VO(acac), 3741
 reduction of azides to amines by catalytic transfer hydrogenation, 1609
 solid-liquid phase transfer, optimisation of polymer-supported

- oligoethers, 1661
transition metal complexes, use in intermolecular Diels-Alder reactions, 3037
with CoPTT, mechanism of reaction with cycloheptatriene 1,4-endo-peroxide, 4135
- Cephalosporins**
bromination of 3-methyl-2-thia-cephem, 3283
penicillins, conversion to secodethiacephalosporins, 1875
preparation of 7- α -hydroxy-7 β -acylureidobenzylcephalosporins, 283
synthesis and desulphurisation of 3-methyl-2-thiacephem-4-carboxylates, 1631
synthesis of 3-hydroxy-(\pm)-1-carbacephem, and conversion to (\pm)-carbacephem, 4837
synthesis of sodium (d 1)- β -phenoxacetamido-1 α -hydroxy-1-carbacephalosporanate from acyclic precursors, 3783
- Cerium and compounds**
aldol reaction with cerium enolates, 5233
charcoal-cerium(IV)ammonium nitrate catalyst for air oxidation of benzyl alcohols and acyloins, 2399
- Chalcones**
catalytic epoxidation giving 37% ee, 1243
chalcone, β -methylation, 3517
enantiomeric excess in β -methylation of chalcone by chiral cuprates, ligand effects, 3513, 3517
hydroxychalcone - flavanone interconversion, 2851
sodium alkanechalcohenates as demethylating agents, 377
- Chemiluminescence**
controlled, oxidation of tetraaryl- $\Delta^{2,2'}$ -biimidazolines by triplet oxygen in presence of fluorescers, 2307
Cypridina luciferinol structure, 5753
dynamic process, cyclic and acyclic pathways in photo-oxidative decarbonylation of 5-methyl-furfural, 1193
of N-methyl-9-(dicarboalkoxy-methyl)acridanes, 3005
- Chiral compounds**
allenic ester, asymmetric Diels-Alder reaction, synthesis of (-)- β -santalene, 4665
alternative to chiral recognition rationals, stacking of amide dipoles, 5707
amines, catalysis, resolution of racemic sulphilimines by reduction with arenethiols, 1191
axial chirality introduced in phase transfer catalysts by quaternisation with 2,2'-bis(bromomethyl)-1,1'-binaphthyl, 1243
axial chirality of substituted alkylidenecyclohexanes, prep, 755
chiral enoates, asymmetric 1,4-additions of coordinated MeCu.BF₃, 4971
chiral epoxides, precursors of chiral allenes, 5587
chiral fragments of oleandomycin and lankamycin, synthesis, 1311
chiral induction in auxiliary reagent mediated aza-Claisen rearrangement, 4535
chiral protected α -hydroxy-aldehydes, synthesis, 817
D-glucose as chiral template for (-)-sarracenin synthesis, 401
deuterium incorporated into 2-n-hexyl-5-n-propylresorcinol, Eu(fod)₃-shifted ²H NMR as probe chirality, 5261
development of chiral 7-dicarbonyl equivalents, 2733
enantiomeric composition of chiral 2-substituted-1,2-glycols via ¹³C NMR and HPLC, 3551
enantiomeric purity of RCHOHCH₂OH, 3547
erythromycin from D-glucose, stereo-controlled synthesis of segment with six chiral centers, 3635
hydride reagents, prep from LAH and (S)-4-anilino- and (S)-4-(2,6-xylyldino)-3-methylamino-1-butanol, reduction of unsaturated ketones, 4123
method for distinguishing prochiral hydrogens at C-1 of spermidine, 151
preparation of (R)- γ -hexanolide, (5R,6S,7S)-6,7-isopropylidene-dioxy- δ -octanolide and (+)-exobrevicomin from (2S,3S,4R)-2,3-isopropylidenedioxy-4-benzyl-oxyhept-6-ene, 3753
preparation of 2,5,8-trioxatri-cyclo[5.2.0.0^{3,6}]nonane, 2557
preparation of chiral 1,2-diols using (2S,3R)-1,2-epoxy-3-butanol, 4539
stereospecific conversion of P-chiral dialkyl phosphorothioates into [¹⁸O]-phosphates, 5677
sulphines, asymmetric induction in Diels-Alder reactions, 2035
synthons for polyketide-derived natural products, stereo-controlled synthesis, 1987
synthons with three consecutive chiral centers, stereoselective synthesis, 2661
trialkylaluminum reagents, reaction with 2,3-epoxyalcohols, synthesis of α -chiral aldehydes, 1377
- Chlorophyll**
chlorophyll A and B aggregates in soln, structures, PMR, 2681
chlorophyll b, ¹³C NMR, 173
isolation of 2-(1-hydroxyethyl)-2-desvinyl chlorophyllide a, 5703
structure of 4-vinyl-4-desethyl chlorophyll B, fast atom bombardment mass spectra, 5775
- Chromanes and chromenes**
amines, addition to 3-homochromone and 6-bromofurochromone, ring contraction of pyrone ring, 3435
chromene and chromone, new synthesis, 597
chromene rearrangement, 597
photoreaction of 3-nitro-2-phenyl-2H-chromene in methanol, 2209
reaction of phenylhydrazine with 3-chromonecarboxylic acid, 381
ring contraction of tetrahydro-1-benzoxepin-3-ol to 2-hydroxy-methylchroman, 2495
- Chromium and compounds**
chlorotrimethylsilane-chromium oxidation of alcohols to carbonyl comds, 4367
cromlumetricarbonyl-complexed benzyl acetates, α -alkylation of ketones and esters, 2837
formation of (arene)tricarbonyl-chromium(O) complexes, 4855
organo compd derived from alkenyl halides, addition to aldehydes, 5281
- Circular dichroism**
absolute configuration of (\pm) anti head-to-head coumarin dimer, 5381
azobenzene-appended γ -cyclodextrin, prep, 5245
CD spectra of (1R)-5-exo,5-endo- and (1R)-5-endo,5-exo(epoxy-methano)-2,3-dimethylidene-[2.2.1]heptanes, 3607
configuration at C-15 in prostanoids, 3017
magnetic, of monoacetyl porphyrins, structure implication, 2433
- Cleavage reactions**
abnormal of amide group in N-substituted 4-carbamoyltetra-decachlorotriphenylmethyl radicals, 2121
aliphatic, aromatic and cyclic ethers, cleavage of C-O bond by dimethylboron bromide, 2969
alkyllithium cleavage of allylic ether, chelation controlled stereoselectivity, 1361
Beckmann cleavage, 2,5-dimethyl-9-oxo-6,7-benzomorphan oxime, 413
chiral acetals, cleavage using organoaluminum reagents, prep of optically active alcohols, 4581
cleavage of activated enantiomeric substrates with cyclodextrins, 5541
cleavage, Si-C bond of α -silyl-alkylphosphonates, 739
cleavage, Si-vinyl carbon bond by ¹⁸Bu₃NF, 2877
cyclic trimethylsilylketoxime acetates, 4021
cyclohex-2-enyl derivs of Si, Ge and Sn, 5789
cyclopropyl tetracyclic, selective cleavage, 681
deblocking p-nitrobenzyl protected bases and phenols, using H₂O₂, 1385
dibenzothiophene 5,5-dioxide, C-S bond cleavage by alkoxide ions, 3543
dimerisation of olefins and cleavage of cyclobutane derivs, 5815
electronic effects, semiconductor catalysed oxidative cleavage of olefins, 547
halotrimethylsilane cleavage of 2,5-dimethoxytetrahydrofuran and 2,6-dimethoxytetrahydropyran, 1225
heterolytic cleavage, methyl 2-trimethylsiloxy cyclopropane carboxylates, 715
hydroxide ion cleavage of p-nitrophenyl diphenyl phosphate occurs at exovesicular and endovesicular sites of dihexadecyldimethylammonium ion vesicles, 3961
MEM, MOM and MTM ethers, 3969
methyl and methylthiomethyl ethers, 1189

- of acetals and ketals using dimethylboron bromide or diphenylboron bromide, 3969
photochemical α -cleavage of 5-methyl-1,5-hexadiene-3-one, 2961
rearrangement of penicillin G β -sulphoxide, cleavage of C₃-S bond, 201
reductive C-C cleavage in synthesis of *cis*, *syn*, *cis*-triquinanes, 809
selective, of β -methoxyethoxymethyl ethers using 2-chloro-1,3,2-dithioborolan, 3965
silaoxetanes of fluorenone, benzophenone and α -pyrone, 1477
- Cobalt and compounds**
new entry to π -allylcobalttricarboxyls using Me₃SiCO(CO)₄, 5649
organocobalt mediated synthesis of substituted 3-oxabicyclo-[3.3.0]oct-7-en-6-ones, 2905
reductive coupling of allylic halides by chlorotris(triphenylphosphine)cobalt(I), 921
- Complexes**
acetylenic prostaglandin isomers separation as Co complexes, 2533
alkynyl alanes, coupling with (propargyl acetate)dibalt hexacarbonyl complexes to formed skipped (1,4)-diynes, 2239
aluminium halide σ -complexes of cyclobutadienes, reaction with phosphonous dichlorides, 1423
base catalysed H-D exchange of 5,6,7,8-tetrakis(methylene)-2-bicyclo[2.2.2]octanone-irontricarboxyl complexes, 1983
boron difluoride-3-acyl tetramic acids, 4757
carbonyl compd-dependent intermediate complexes, formation in Ivanov reaction, entropic evidence, 589
cationic enol ether-iron complexes, vinyl cation equivalents, 695
chiral copper complexes, use of (2*S*,4*R*)-hydroxyproline derivs as ligands, 3517
cleavage of activated enantiomeric substrates with cyclodextrins, 5541
complexation behaviour of two cyclohexypyridines, 2707
conducting, (telluropyranyl)-telluropyran donors with TCNQ and closed shell anions, tetrafluoroborate and perchlorate, 539
crystalline dipolar Meisenheimer complexes, formation, 3563
disengagement of organic ligands from ironcarbonyl complexes, 1615
effect of carbene olefin complexation on relationship between absolute rates from laser flash photolysis and product ratios, 4763
formation of (arene)tricarboxyl-chromium(0), 4855
four complexes of 4,4-diethylmorpholinium with 2,5-dibromo-TCNQ, semiconductors and X-ray structure, 1205
good conductors, diphosphonium iodides with 7,7,8,8-tetracyanoquinodimethane, 3107
highly conductive, 1,4,9,10-tetraiaanthracene as donor molecule, 2401
influence of cation complexing solvent additives in asymmetric alkylation of esters via lithium enolate, 3213
iron carbonyls with dehydro- β -ionone, 1611
irradiation of oxygenated solns of η^3 -allylpalladium complexes, oxidation of allyl group, 4567
isolation and characterisation, novel 1-substituted 2-platina-bicyclo[1.1.1]pentane, 2595
leaving group dependent stereochemistry of thioallene formation with phenylthiocopper phosphine complexes, 4797
lithium compd-ketone, orange colour, 4213
Meisenheimer, direct formation from primary, secondary and tertiary arylamines, 1555
metal complexes as efficient promoters for B₃H₈-reductions, 4955
mixed valence binuclear, charge transfer properties, 2957
new entry to π -allylcobalttricarboxyls using Me₃SiCO(CO)₄, 5649
new lipophilic ionisable crown ethers, complexation of K⁺, 457
of 4,4-diethylmorpholinium with 2,5-dibromo-TCNQ, semiconductors and X-ray, 1205
of boron difluoride and 3-acyl tetramic acids, 4757
olefin cyclisation with Hg(II)-trifluoromethane sulphonate-amine complex, 2581
organoiron and organomanganese, direct carbomethoxymethylation, using Reformatsky reagent, 2465
organoiron, decarboxylation, 5781
preparation of 1,3,5,7-tetra-kis(trifluoromethyl)2,4,6,8-tetraethylporphyrin and metal complexes, 4343
selective and efficient metal ion complexing agents, prep of crown carboxylic acids, 2923
titaocene methylene-Zn halide complex, synthesis and methylenation of ketones, nitriles and alkynes, 2043
Zwitterionic N-bonded σ -complexes, imidazole 4,6-dinitrobenzofuroxan, NMR, 493
- Configuration**
absolute configuration of (-)-oudemansin, 2009
absolute of (-)-S-(2-carboxypropyl)-L-cysteine, 1133
absolute of 2,3-deuterated 3-alkylpropanols, 5257
absolute of 24,26-cyclocholesterol by biomimetic conversion to 27-norergosterones, 3461
absolute, and resolution of 3-PPP, 343
absolute, *trans*-3,4-dihydrodiols and 3,4-diol-1,2-epoxides of benzo[*c*]phenanthrene, 1349
assignment at C-15 in prostanoids, CD spectra, 3017
behaviour of of allenic anions, 3939
fixation of N-configuration and prep of ephedrine boron derivs, 759
instability of optically active selenoxides, hydrate formation, 3191
of griseusins revised, 389
- of photodimers of 1-substituted acenaphthylenes, 4095
relative to synthesis of (\pm)-mostuerine, 3627
- Conformation**
analysis and crystal lattice effect in oxygenated hexalin, octalin and decalin derivs in soln and solid state, ¹³C NMR, 4555
analysis of (Z,E,E)-humulene, 2869
analysis of aminocyclohexane using ¹⁵N NMR, 4519
analysis of gramicidin S, 3737
and structure, [5]metacyclophanes, 1821
axial allylation in conformationally rigid diosphenol allyl ether, 3
cis-disulphides, PE-spectrum of 6,7-dithiabicyclo[3.2.1]octane, 319
clerodin and caryoptin, stereochemistry and conformations, CD and ORD spectra, 5631
dependence of one-bond ¹³C-¹³C coupling constants on bond angles, 1833
in solution of 6 α and 6 β epimers of oxymorphanine, 4801
mobility of arachidonic acid, 37
of dibenzylidene-ethylene dianion, 3985
of seven dithial[3.3]azulenophanes, 2199
polynucleotides, detection of imino H-bond in G-C pairs by ¹H and ¹⁵N NMR, 4067
single molecule and crystal state of 9,10-dihydroanthracene, 2893
stereochemistry of compounds related to torus, 3187
temp and solvent effects on phencyclidine equilibrium, 1855
unusual around C-10-C-11 bond in pederine derivs, 1277
- Copper and compounds**
acylation of alkenyl-copper reagents, synthesis of enones, 5081
copper triflate catalysed codimerisation of cyclohexene and cycloheptene, 1419
iodo, bromo or tosyl amino acids, reaction with R₂CuLi, 3717
lithium organo cuprates, addition to N,N-diethylsorbamide, 5089
metallo-catenanes, synthesis, 5095
methyl copper, reaction with 2(-)R-oxazolidine, 585
organocopper reagents derived from chloroprene, reaction with α , β -unsaturated carbonyl compounds, 1003
organo reagents, coupling with aryl triflates, synthesis of arenes from phenols, 2723
organocuprates, reaction with iodo, bromo or tosyl amino acids, 3717
oxazolidines derived from α , β -ethylenic aldehydes and ephedrine, reaction with organo cuprates, 373
preparation of vinyl copper reagents bearing trimethylsilyl moiety in allylic position, 5077
salts, effect on reaction of cyclohex-2-enyl chloride and 3,4-epoxycyclohexene with phenyl dimethylsilyl-lithium, 5785
spiroannulation via gem-dihalocyclopropanes and cyclocuprate species, 5767

- synthesis of S(-)-[1,1'-binaphthalene]-2,2'-diol using S-(+)-amphetamine-Cu(II) and 2-naphthol, 3261
- use of cupric bromide in synthesis of prostanoid intermediates, 555
- vinyl cuprate reagents, addition to carbohydrate derived enones and α,β -unsaturated esters, 2231
- Coumarins**
- celerin, structure revision, 5897
- coumarin rearrangement, 597
- coumarins, coumurrayin, xanthoxyletin and trachyphyllin, synthesis, 3403
- homologs of juglone bearing 4-hydroxy-5-methylcoumarin-3-yl units, new natural product, 1085
- isoflavylum salts, starting material for 3-phenylcoumarins, 3993
- naphthalene core of streptovaricin D, synthesis, 269
- optical resolution of anti head-to-head coumarin dimer, 5381
- pyranocoumarins nordentatin, dentatin and clausarin, syntheses, 3773
- synthesis of 3-phenylcoumarins, 3993
- Cyanides see Nitriles**
- Cyano compounds**
- addition of Grignard reagents to O-trimethylsilylated cyanohydrins, 4075
- anodic cyanation of ergoline, 2841
- cyanohydrin, protected, intramolecular alkylation, route to humulene, 4695
- cyanquinodimethane, conducting complexes with (telluropranyl)-telluropyrans, 539
- cyclopropanone cyanohydrins, rearrangement to β -peroxypropiolactones, 4699
- dealkoxycarbonylation of methyl α -cyanocinnamate and decarboxylation of corresponding cyanacid, 3835
- Ni mediated hydrocyanation and carbonylation of alkynes with trimethylsilylsocyanide, 2073
- protected cyanohydrins, alkylation, inversion of configuration and important racemisation, 4683
- protected cyanohydrin, intramolecular alkylation, 3485, 3489
- protected unsaturated cyanohydrin ethers, intramolecular alkylation, 2005
- succinic acid derivs, prep from cyanohalides under PIC conditions, 4131
- tetracyanoethylene, competitive cycloadditions to bicyclo[3.2.1]octa-2,6-diene, 2047
- tricyanohydrins, prep and use in prep of β -aminoethyl alcohols, 4335
- tricyanohydrins, synthesis, 4335
- Cyclisations**
- action of NaBH₄ on oximes of δ -ethynyl-5-oxo- α,β -secosterols, 5017
- allenic ketones, reductive cyclisation, formation of functionalised 5-membered rings, 4617
- allyl trichloroacetates, synthesis of trichlorinated γ -butyrolactones, 2395
- allylsilane initiated carbocyclisations, 1909, 1913 and photo H-abstraction in maleimide derivs, 1841
- aryltetralin lignans, biomimetic synthesis by cyclisation of 3-propargyl substituted quinonemethide ketals, 621
- base catalysed, of N-alkyl-(E)-stilbene-2-carboxamides, 1319
- biomimetic, of 1-epi-gallicin to trans(1 β -H: α -H)guaianolide, 969
- closure of 2-aza-Cope N-acyliminium ring, 2109
- cyclisation of 2-alkoxy-3-aryl cyclohexenones, 5887
- cyclisation of secondary γ -allenic and α -allenic amines, 3997
- dimethylamides, yielding 6-, 9-, 12- and 15-membered cyclic depsipeptides, 1921
- ethylenic acyl cyanides addition to alkynylsilanes, 1395
- formation of cyclohexenes from 1,5-dienes, 2235
- free radical carbocyclisation, synthesis of fused and bridged ring systems, 1871
- hendecafulvadienes, synthesis and electrocycloisomerisation, 2151
- Hg and Pd substituted acryl-anilides, 15
- indoles from α -azidophenylalkenes, 5169
- intramolecular of diazomethyl ketones, 3921
- iodocyclisation of anti-4-bromobenzyl ether acetate, synthesis of davanone, 1365
- iodocyclisation of unsaturated lactols, 4307
- keto ester induced by Ti, synthesis of isocaryophyllene, 1885
- N-benzoylformyl-N-(phenylthio)carbonyl amines, involving 1,4-phenylthio migration, 1169
- olefinic oxime mesylates, synthesis of dl-muscovone, 943
- olefins with mercury(II)trifluoromethane sulphonate-amine complex, 2581
- onto aromatic systems using 1,3-benzodithiolium ions, 2939
- oxidative, of 4-acylamino phenyl-guanidine derivs, prep of benzimidazole-2-carbamates, 3155
- Pd catalysed, 1,5-bismethylene-cyclooctane, one carbon ring enlargement, 1971
- Pd catalysed, homoallylic chloroformates, synthesis of α -methylene- γ -butyrolactones, 4687
- photo reactions of haloarylethyl- β - and α -enamino ketone, C- and N-cyclised products, 5567
- photocyclisation of 5-(1-alkenyl)-1-phenylpyrazoles, 4679
- potential 1,3-dipoles, X=Y-ZH systems, 1,5-electrocyclisation of imines, 1201
- reduction and synthesis of N-(3-butenyl)morpholin- and -thiomorpholin-2,6-diones, 91
- reductive, of selenoxanthin-10-*io*(alkoxalyl alkoxycarbonyl)-methanides, 75
- secondary γ - and δ -allenic amines, synthesis of 2-alkenyl-pyrrolidines and -piperidines, 3997
- stereochemical control in 1,4-biradical cyclisation, photo-reaction of benzoylvalerates, 1995
- transannular and conformation of (Z,E,E)-humulene, 2869
- Cycloadditions see also Addition reactions**
- activated acetylenic or olefinic dienophiles tethered to proximally methylated butadiene unit, 4529
- alkynes with α -acyl-2-chloro-sulphides, synthesis of furans and 2-furanones, 3877
- arene to olefin, synthesis of (+)-isoiridomyzecin, 4543
- areneolefin cycloadditions, synthesis of (+)-corioliin, 5325
- aryl thioimidates with dimethyl 1,2,4,5-tetrazine-3,6-dicarboxylate, 4511
- azido derivs to activated acetylenes, 5543
- C-cyclopropyl nitrones to dipolarophiles, 435
- chiral camphor or sulphoximino substituted sulphines and 2,3-dimethyl-1,3-butadiene, 2035
- competitive dipolar, tetra-cyanoethylene to bicyclo[3.2.1]octa-2,6-diene, 2047
- concerted and stepwise, triphenyl-allyl cation with cyclopentadiene, 357
- cyano enone and olefins, trapping of intermediates with O₂, 2195
- diazoketanes to 7-halo-norbornadienes, effect of halogen and steric factors, 1387
- dialkylketanes to 7-halo-norbornadienes, effect of electronic activation of dipolar double bond, 1391
- dialkylketanes to cyclobutanone, 5469
- dichloroketene to bridged bicyclic olefins, 3811
- dichloroketene with vinyl- and alkynylsilanes, 23
- Diels-Alder reaction, intramolecular, of 2-alkenyl-1-alkoxycarbonyl-1,2-dihydropyridines, 2711
- Diels-Alder reactions of 1,3-benzoxaphospholes and 1,3-benzoxaarsoles with 2,3-dimethylbutadiene but cycloaddition with tetrachloro-*o*-benzoquinone, 5481
- dienophiles to 2-(*t*-butylthio)-acrylonitrile, 885
- dienophilic and dipolar to bicyclo[2.1.0]pent-2-ene, 5727
- diphenylisobenzofuran and tetracyclo[3.2.1.0^{2,4}.0^{3,6}]oct-2-ene, 181
- effect of ring strain on regioselectivity, methyl propiolate and 1-vinylcycloalkenes, 241
- enantiomerically pure alkyl-acrylates, Ni(0)-catalysed cycloadditions with methylene-cyclopropane giving 3-methylene-cyclopentane carboxylic acid alkyl esters, 3599
- ethyl N-acetyl- α,β -dehydroalaninate with 1,3-dipoles, 2193
- fulminic acid, 1815
- Hammett correlation of rates and ionisation energies, thiobenzophenone to substituted phenyl-

- allenes, 1101
 in carbene, steric effects, 881
 intramolecular Diels-Alder reaction of substituted cyclopentadiene, formation of 3 quaternary centers, 3295
 intramolecular of nitrile oxide, prep of hydroazulene ring system, 3705
 intramolecular photo-, 1,ω-bis(4-vinylxyphenyl)alkanes, 3849
 intramolecular, synthesis of semibullvalenes, snoutenes, azasnoutenes and polycyclic azo compds, 4087
 intramolecular, synthesis of bicyclo[n.3.]bridgehead alkenes, 657
 intramolecular, with 2-(ω-alkenyl) 5-hydroxy-4-pyrones, 1675
 ketene acetals with carbonyl compds, under pressure, 4613
 keteniminium salts to olefins, stepwise mechanism, 2251
 mesoionic oxazolones to alkenes, 369
 methyl propiolate and C-alkoxy-nitrone, 4657
 methyl vinyl ketone with 3-PhS(e)-(1), 2(di)halobutadienes, 447
 Ni catalysed, (diorganomethylene)-cyclopropanes with electron-deficient olefins, 5847
 nitrile oxide to 3-butene-1,2-diol and derivs, 5501
 nitrile oxides to aryl thio-cyanates, 5141
 nitrile oxides to unactivated olefins, regiochemistry, 1337
 olefins to reactive intermediates, generated by irradiation of α-β epoxyketones, prep of benzannelated pethydroazulenes, 5585
 pathway from allanthone to shinjulactone, 4843
 phenylglyoxylic acid and tetramethylethylene or diethyl ketenacetal, formation of oxetanes, 3217
 phosphaaalkenes with dimethyl-butadiene, 3591
 photochemical, enamine-carbaldehydes and alkenes, 3579
 pyridyl-, thiazolyl-, fluorenyl- and dibenzotropylium-imes, lactams and thiolactone to dipolarophiles under thermal activation, 4363
 rate, cyclooctyne to N-containing heterocycles, 1481
 regiochemistry of photocyclo-addition of isobutylene and 5-substituted uracils, effect of substituents, 4055
 regioselective, α-acyliminium ion with allyl and propargyl silanes, 1407
 singlet O₂ to conjugated acyclic hexadienes, 3303
 stereoelectronic aspects in the [π₂+σ₂]-photo reaction in tetracyclo[4.4.0.0.2¹⁰.0.3⁷]dec-4-ene system, 2143
 stereoselectivity, N,N-diethyl-aminopropyne with 4-methylcyclopentenone, 1025
 substituted benzynes and 1-methylene isouquinolines, 2107
 thiobenzophenone S-methylide with electrophilic C=S, C=C, C=C, and N=N bonds, 4181
 xanthenethione with phenylallene, presence of free radical, 2299
- Cycloalkanes**
 dihalocycloalkanes, dehydrohalogenations, 2737
 methyl propiolate reaction with 1-vinylcycloalkenes, 241
 one bond ¹³C-¹³C coupling constants dependent on C-C bond angles, in hydrocarbons with central CH₂, 7
 photocyclodimers of 2-cycloalkenones, structures, 5851
- Cyclobutanes**
 autoxidative ring contraction of 1,2-bis(trimethylsiloxy)-cyclobutenes to 1-trimethylsilyloxycyclopropane carboxylic acid trimethylsilyl esters, 2635
 benzocyclobutene, synthesis of homoisoflavanone (±)-scillascillin, 5581
 cyclobutanes and olefins, electron transfer induced interconversion, 5815
 derivatives, cleavage to 2,3-dioxohexahydroazepine-6-carboxylates, 1949
 effect of cyclobutene ring annelation of p-benzoquinone, 1727
 formation of 2,3,4-trimethylcyclobutanones, solvolysis of 1,2-dimethyl-3-pentynyl triflate, 577
 functionalised cyclobutanes and synthesis of precursors to grandisol and fragranol, 423
 photolysis of α,α-disubstituted cyclobutanones to terminal olefinic esters, 2067
 rearrangements of 1;2-dimethyl and 1,3-dimethyl-1-cyclobutyl cations, 1147
 ring expansion of 1-acyl-1-[p-tolyl, (or methyl)thio]cyclobutanones, to cyclopentanones, 79
 unexpected β-elimination from 3,3-difluorocyclobutanecarbonitrile, 1639
- Cyclodecanes**
 synthesis, 2,6-dimethyl-(E,E)-, 3,7-dimethyl-(E,E)- and 3,7-dimethyl-(Z,E)-2,6-cyclodecadienones, 2005
- Cyclododecanes**
 triacontanol, synthesis, cross-metathesis of cyclododecene with methyl oleate or oleyl acetate, 2855
- Cycloheptanes**
 synthesis, isolation and characterisation of cis- and trans-2,7-dimethyl-3,5-cycloheptadienone, 2627
- Cyclohexanes**
 allylic H-abstraction from 1-X-substituted cyclohexenes, 5019
 conversion of 2,6-dimethylcyclohexanone to 2,6-dimethyl-2,6-tetrahydropyran-2-carboxylate, 2567
 cyclisation of 1,5-dienes formation of cyclohexenes, 2235
 cyclohexadienones, addition of functionalised organo lithium compds, 131
 cyclohexanespiro compds from 1-aminocyclohexenes and phenyl-carbamoyldiimide, 2909
 cyclohexanone, enantioselective alkylation, 511
 cyclohexene and cycloheptene, codimerisation, 1419
 cyclohexene double bond, effect of remote substituents on reactivity, 5133
 gauge interaction in trans-1,2-dimethylcyclohexane, 453
 reactions of cyclohex-2-enyl chlorides and 3,4-epoxycyclohexene with phenyl-dimethylsilyl-lithium, effect of Cu salts, 5785
 related 2,5-cyclohexadiene, 4-hydroxycarboxylic acid molecules, aromatisation of prephenate, arogenate and spiro-arogenate, 2815
 Si, Ge and Sn derivs of cis-4-alkylcyclohex-2-ene, stereospecific γ-anti trifluoro-acetolysis, 5789
 syn stereospecificity and SO₂ insertion into 4-and 6-alkylcyclohex-2-enyl trimethylstannanes, 5793
 synthesis of β,γ-epoxycyclohexanones, 107
 vicinally substituted, construction, stereochemical control, 465
- Cyclononanes**
 cyclononone ring, formation, in synthesis of isocaryophyllene, 1885
- Cyclooctanes**
 cyclooctatetraene and derivs, reactions, 2607
 transformation of 1,5-bismethylene-cyclooctane to bridgehead substituted bicyclo[4.3.1]decane derivs, 1971
- Cyclopentanes**
 alkylidenecyclopentane -1,3-diyls, precursors, 4499
 chloral, reaction with α-acetylcyclopentanone, revision, 2393
 cycloaddition of N,N-diethyl-aminopropyne with 4-methylcyclopentanone, 1025
 cyclopentanols by conversion of ketones having δ,ε,π-functions, 2821
 cyclopentenone, by acetalisation of γ-substituted α,β-unsaturated ketone, followed by hydrolysis, 439
 cyclopentenones, alkenyl sulphoxides as precursors, 405
 fulvalene derivs containing cyclopentadienyldiene moiety, synthesis, 5273
 functionalised cyclopentenyl-phosphonates, synthesis, 767
 functionalised trialkyl substituted cyclopentanoids, synthesis, 5797
 new synthesis, of 2-, 2,4- or 2,5-substituted derivs of cyclopentanones, 79
 optically active pentaalkylcyclopentadiene, synthesis and prep of optically active organometallic compds, 3087
 photolysis of cis- and trans-2-(3,5-dimethoxyphenyl)cyclopentyl methane sulphonate, 4521
 preparation of (diorganylmethylene)-cyclopentane derivs, 5847
 preparation of 5,5-disubstituted 2-hydroxycyclopentenones and transformation to 3,3-disubstituted

- cyclopentanones, 4625
 stereochemistry of cyclopentene
 addition to *cis*- and *trans*-2-
 butene and to 1,3-butadiene, 5495
 vicinally substituted,
 construction, stereochemical
 control, 465
- Cyclopropanes**
 bifunctional cyclopropanes and
 1,2,4,5-tetrazines, mechanism of
 reaction, 1485
 bifunctional cyclopropyl reagent,
 synthesis of 7-*E*,9-*Z*-methyl
 trisporate B, 2833
cis disubstituted cyclopropanes
 from lithiated benzylic of allylic
 3-methyl-1(*Z*),3-butadienyl
 sulphides, 2387
cis trans isomerisation of cyclo-
 propanes, kinetics, comparison
 between capto-dative and dicapto
 radical stabilisation, 2765
cis-trans isomerisation, 3431
 cyclopropanation, ketene
 alkylsilylacetals or ketene
 disilyl-acetals yielding
 cyclopropanone acetals, 1251
 cyclopropanation, vinylselenones
 with active methylene compds,
 4429
 cyclopropanations with :CBr₂,
 nontriplet and nonstereospecific,
 3799
 cyclopropanic derivs by irradiation
 of 3,3-dimethyl-5-alkynyl 3H-
 pyrazoles, 1779
 dehalogenation of 1,1,2-trihalo-
 cyclopropanes with MeLi, 605
 diphenylcyclopropane derivs, ring
 opening with strong base
 initiated by proton transfer,
 3225
 diphenylcyclopropanone, thiophene
 insertion compd, 205
 enantiomers of 1-deuterio-2-
 cyclopropylethyl tosylate,
 acetolysis and formolysis,
 cyclopropyl participation and
 nucleophilic solvent assistance,
 4959
 geminally functionalised, prep via
 1,3-dehydrohalogenation of α -halo-
 ketimines, 2885
 homoallylic substitution of
 piperidine with 1-bromo-1-cyclo-
 propyl alkanes, 5031
 isomerisation of 2-fluoro-1-
 methylenecyclopropane, 1217
 low temp, equilibration, 715
 methylenecyclopropane, metallation
 with *n*-BuLi, 1467
 new cyclopropanation, synthesis of
 tricyclo[3.2.1.0^{2,4}]octanes, 4493
 new reaction of 1,1-dichloro-2-
 halomethylcyclopropanes in basic
 medium, 1065
 photochemistry of 1,1-diarylcyclo-
 propanes, 41
 photoreactions of 1,3,3-triphenyl-
 cyclopropene, vinylcarbene
 intermediate, 2523
 possible silacyclopropanylidene,
 intermediate from vinylsilylene
 rearrangement, 159
 reaction of tetracyclo-
 [3.3.0.0^{2,4}.0^{3,6}]oct-7-ene with
 HCl and DCl, formation of *edge*-
 and *corner*-protonated cyclo-
 propanes, 4599
 ring formation, reaction of
 quinoxalines and naphthyridines
 with α -halocarbanions, 3239
- spiroannulation via gem-
 dihalocyclopropanes and cyclo-
 cuprate species, 5767
 stereospecific synthesis from γ -
 stannyl alcohols, 4591
 synthesis, trapping and character
 of 1,4-di-*t*-butylmethylene-
 cyclopropene, 1683
 tetracarbonyl Ni induced reaction
 of gem-dibromocyclopropane with
 alcohols or amines, 1255
- Diazepines**
 ring enlargement of N-imino-
 pyridinium ylide, formation of
 two chlorodiazepines, 3327
 synthesis of 3,4,5-trihydro-1,3-
 diazepin-5-ol ring, 4789
- Diazo compounds**
 competitive diradical and
 diazoalkane formation,
 thermolysis and photolysis of
 7,7,8-tri-methyl-2,3-diaza-
 tricyclo-[4.2.1.0^{4,8}]-non-2-ene,
 1699
 cycloaddition, diazoalkanes to 7-
 halonorbornadienes, effect of
 electronic activation of dipolar
 double bonds, 1391
 cycloaddition, diazoalkanes to
 cyclobutanone, 5469
 decomposition of 7-substituted 3-
 diazo-2-norbornanones, acid
 induced, 2419, 2423
 diacetylene reaction with 2-
 diazopropane, 1775
 diazoalkane substitution of
 lithiated diazomethyl compds and
 formation of 4-diazomethyl-4H-
 pyrans, 5355
 diazoketones, Rh-catalysed decomp,
 221
 diazotisation of 4-amino-5-*t*-
 butylisoxazole, 3149
 different photolytic behaviour of
 1,3-bis(α -diazobenzyl)benzene in
 soln or in crystals and matrices,
 1723
 direct observation of 4-
 cyclohexenyldiazomethane, 5473
in situ diazo coupling under 2-
 phase conditions, catalysed by
 TFPB ion, 470
 photolysis, α -diazamides, 233
 photolysis, α -diazocyclopentanones,
 423
 reaction of 7-halonorbornadienes
 with diazoalkanes, 1387, 1391
 regiospecific synthesis, α -phenyl- α -
 (phenylthio)ketones and α -
 (phenylthio)cycloalkenones from α -
 diazoketones and phenylsulphenyl
 chloride, 117
- Diazonium compounds**
 aryl diazonium tris(fluoro-
 sulphonyl) methanides, decomp, 87
 one electron transfer in reduction
 of arenediazonium salts, 3331
- Dienes and trienes** see also **Alkenes**
 acyclic 1,5-dienes, functionalised,
 Cope rearrangement, 3757
 addition of singlet oxygen to
 alkoxy and trimethylsiloxy-
 butadienes, formation of new
 peroxides, 4291
 addition to haloquinones, 2453
 adduct with *N*-sulphinyltoluene-
 sulphonamide, synthesis of
 unsaturated acyclic amines, 987
- amidoalkylation with adducts of
 glyoxylic acid, 955
 basic treatment of allylic 1,1-
 disulphones to 1-arenesulphonyl
 1,3-dienes, 4315
 bis-cyclopentane annulation of 1,3-
 cyclopentadiene, 809
 bridgehead meso with *trans*, *trans*-
 1,5-cycloalkadiene linkage, 4173
 bridgehead, stain energies, 4169
 butadienylphosphonates, and
 functionalised cyclopentenyl-
 phosphonates, syntheses, 767
 butatrienes containing
 bisdehydro[13]annulene system as
 terminal groups, synthesis and
 properties, 2861
 by rearrangement of methylencyclo-
 propylcarbinols, 2347
 chiral induction in cyclo-
 condensation of aldehydes with
 siloxydienes, 3451
 Clemmensen reduction of mono- and
 dimethoxycyclohexa-1,4,-dienes,
 4425
 conjugated (*E,Z*)- and (*E,E*)-
 alkenes, stereospecific
 synthesis, 2513
 conjugated, stereospecific
 synthesis using alkenylboranes,
 1527
 conjugated, synthesis by reaction
 of 1,3-alkadien-2-yl phosphates
 with Grignard reagents, 5137
 cyclisation of 1,5-dienes, PdCl₂
 promoted, formation of cyclo-
 hexenes, 2235
 cycloadditions of singlet O₂ to
 conjugated acyclic hexadienes,
 3303
 cyclobutadiene, aluminium halide σ -
 complexes, reaction with
 phosphonous dichlorides, 1423
 cyclooctyne, cycloaddition rate to
N-containing heterocycles, 1481
 cyclopentadiene reactions with
 triphenylallenyl cation, 357
 deuterium NMR study of 4-
 methyloestratriene formation,
 3405
 dicyclopentadiene, regio- and
 stereoselective synthesis of (\pm)-
 sulphinene, 83
 Diels-Alder between 2,6- and 2,5-
 dimethylbenzoquinone and sodium
 (*E*)-4,6-heptadienoate, 3807
 dienophiles high pressure Diels-
 Alder reaction with 5-alkoxy
 pentadienoates, 899
 dienophilic activity of *trans* 1,2-
 bis(phenylsulphonyl)-ethylene,
 maleic anhydride alternative,
 1653
 direct stereoselective synthesis of
 either *E*- or *Z*-1,3-dienes, 4029
 ergosterol system, reaction with 4-
 substituted 1,2,4-triazoline-3,5-
 diones, 2995
 formation by ene-type chlorination,
 5737
 formation of 5,5-dichlorocyclo-
 pentadiene in dichlorocarbene
 addition to tetraphenylcyclone,
 4891
 formation of [3.3.0] bicyclo-octane
 ring from cyclopentadiene, and
 synthesis of polyquinane, 3295
 functionalised cyclohexadienones,
 dienols and diendols, synthesis,
 131
 functionalised isoprenes with
 terminal alkoxy group, synthesis
 and regioselective Diels-Alder

- with unsymmetric dienophiles, 1171
- furan diene, intramolecular Diels-Alder reaction, new synthesis of 11-keto steroids, 3145
- halobutadienes, S- or Se-substituted, reactivity, 447
- hetero Diels-Alder, reactions with O-silylated butadiene, 4661
- heterocyclic dienes and trienes, ozonolysis and oxidation, 3323
- homoconjugated, reaction with epoxide functions, effect on Diels-Alder regioselectivity, 3603
- intermediates, β -senepoxide and tingtanoxide, isolation from *Uvaria ferruginea*, 2019
- intramolecular Diels-Alder, use of mixed acetals as linking group for diene and dienophile, 5035
- irradiation of 3-aryl-4-benzoyl-oxy-1,1,4-triphenyl-2-azabuta-1,3-dienes to 3-oxazoline deriv, 1197
- mechanism of pyrolysis of 1,3-butadiene, 869
- nonconjugated, organopalladium additions, π -allyl palladium synthesis, 3457
- nucleophile addition to bicyclo-[2.2.1]-hepta-2,5-diene, photo-induced, 19
- optical active propargylsilane, prep and reaction with t-butyl chloride to give (S)-1,3-diphenyl-4,4-dimethyl-1,2-pentadiene, 807
- organocopper reagents, reaction with α,β -unsaturated carbonyl compds, 1,4-addition products of 2-substituted 1,3-butadienes, 1003
- pheromone component, (3Z,6Z,9Z)-3,6,9-nonadecatriene from *Boarmia selenaria*, 5505
- photocyclisation of a cyclo-decadienone, 5429
- preparation of (E,E)- α -hydroxydienes, 4691
- preparation of 3-hydroxy-1,5-hexadiene systems, 4241
- preparation, new 2,3- and 1,2,3-substituted buta-1, 3-dienes, 445
- reaction at bridging P in P-methylphosphole dimers, 5831
- reactions of mono- and bis-dibromocarbene adducts of trans- and cis-hexatriene with MeLi, 3205
- reduction of 2-benzenesulphonyl-1,3-dienes to conjugated Z,E-dienes, 4319
- regio- and stereoselective synthesis, 1,2-trans di-substituted 3,7-cyclo-octadienes, 385
- reversible dimerisation of phenylbutadienes in solid state, 3263
- saturated aldehydes, conversion into $\alpha,\beta,\gamma,\delta$ -dienoates, and synthesis of trichonine, 4525
- stereo and regioselective synthesis of (E)-1,3-dienes and (E,E)-1,3,5-trienes, 2665
- stereoselective synthesis of (E,E)-conjugated dienes, 1247
- substituted 2-azabutadienes, protonation and alkylation exclusively at N atom, 581
- substituted quinazolines from 1,3-diazabutadienes, 4351
- synthesis of 2-bromoethyl-3-(trimethylsilylmethyl)-buta-1,3-diene, tandem annulations, 1129
- synthesis of bicyclo[4.3.1]deca-1,5-diene, 4165
- synthesis of trans-1-phenyl-1,3-butadiene, 4009
- synthesis, 6-alkyl-6-methoxy-carbonyl-2, 4-cyclohexadien-1-ones and cyclohexadienone ketals, 1369
- tandem Diels-Alder/retro Diels-Alder between 4-phenyloxazole and alkylacetylenes, 2473
- tetra alkyl substituted cyclo-butadiene radical cations, ESP, 639
- Toco reaction with 5-methylhepta-1,3,6-triene, 97
- trienes, Diels-Alder reactivity, regioselective synthesis of anthracycline precursors, 1497
- unbranched alkadienes and trienes, isolation and structure, 4013
- Diols** see also **Glycols**
- chlorination and dehydration of 1,2-diols, 661
- enantioselective synthesis of D-erythro-sphingosine, 5491
- isolation of 3-(13-methylhexadecyloxy)-1,2-(S)propane-diol and 3-(15-methyloctadecyloxy)-1,2-(S)-propanediol, 5699
- kinetic acetalisation for 1,2- and 1,3-diol protection, 4037
- ligustilidol, isolation and structure, 4675
- optically active α -benzyloxy 1,2-diols, synthesis, 2843
- preparation of chiral 1,2-diols using (2S,3R)-1,2-epoxy-3-butanol, 4539
- racemic fecapentaene-12 and regioisomer, mutagen from human feces, synthesis, 5457
- synthesis and configuration of trans-3,4-dihydrodiols and 3,4-diol-1,2-epoxides of benzo(c)phenanthrene, 1349
- unsymmetrical by substituted 1,4- and 1,5-diols, regioselective dehydrogenation, 2677
- Dioxadiazines**
- synthesis of 1,4,2,3- dioxadiazine ring system and thermal decomposition, 4393
- Dioxanes**
- Meldrum's acid, reductive alkylation, 4951
- Dioxetanes**
- formation of 1,2-dioxetanone intermediates in chemiluminescence of N-methyl-9-(dicarboalkoxymethyl)acridanes, 3005
- from thioketeneacetal, 673
- Dioxolanes**
- dioxolanes, prep from bicyclic diazenes, 4499
- prep by Toco reaction with 5-methylhepta-1,3,6-triene, 97
- Dithiazines**
- prep and thermal properties of 1,4,2-dithiazines, 3729
- Electrochemical methods**
- anodic oxidation of enol acetates in presence of Et₃N, 3HF, 903
- electrochemical prep of conjugated nitro olefins, 4443
- electrogenerated acid catalyst for transformation of epoxides to ketones and acetonides, 2857
- electrogenerated tetraalkylammonium superoxide, 2223
- methoxylation of ergolines, revised product structure, 819
- reductive cyclisation of allenic ketones of functionalised 5-membered rings, 4617
- regiocontrolled cyanation of ergolines, 2841
- Electron spin resonance spectra**
- generation and ESR of 1,8-dihydroxy-9-anthron-10-yl radical, 4465
- identification and conformation of free radical in cycloaddition of phenylallene with xanthethione, 2299
- octacyanotetramethylenecyclobutane dianion and anion radicals, 1567
- of tetra alkyl substituted cyclo-butadiene radical cations, 639
- radical cations of ethene, ethine and cyclic ethers, 2315
- radical species in Cannizzaro reaction of substituted benzaldehydes with NaOH, 851
- radical trianions of conjugated hydrocarbons, models for ESR, 3595
- vitamin K₁ chromonoxyl and chromenoxyl radicals, 5099
- Electronic spectra**
- blue shift of protonated Schiff base, bacteriorhodopsin study, 1745
- characterisation of copropbiliverdin III, 3975
- in acid aqueous media for 4-amino-5-methylacridine, solvent sorting of conjugate acid most extensive with DMSO and diminished by pressure, 2427
- novel 3,5-diarylpyridones, 2973
- of triple layered naphthalenophane, 4851
- orbital interactions among four π -bonds in 2,5-ethene[4.2.2]-propella-3,7,9-triene and methoxycarbonyl derivs, 3361
- spectral comparison, 9,9-spiro-bifluorene and 8b,8c,16b,16c-tetrahydrocyclobuta[1,3-1:2,4-1']diphenanthrene, through-bond and through-space interactions, 1149
- through bond and through space interaction in 1,5-dimethyl-3,7-dimethylene tetracyclo [3.3.0.0.2'.8.0'.6]octane, 5063
- Elimination reactions**
- allylic H-abstraction from 1-X-substituted cyclohexenes, 5019
- borane induced, 3-substituted indoles from α' -substituted oxindoles, 2437
- molybdenum elimination of allylic acetates, new diene synthesis, 4525
- of sulphonium moiety from salts functionalised by oxygenated groups, 4231
- reaction of 2,5-diaryl-1,3,4-oxadiazin-6-one with trans-cyclooctene, cis, trans-cyclooctadiene and cyclopropenes, 353
- syn dehydrohalogenations from trans-

- 1-bromo-2-chlorocycloalkanes by complex base or by *t*-BuOK, 2737
 synthesis of a [6.6]paracyclophane tetraene by 1,10-Hofmann elimination, 4413
 unexpected β -elimination from 3,3-difluorocyclobutanecarbonitrile, 1639
- Enamines**
 cycloaromatisation, 3051
 derivs bearing a cyclohexane-spirotriazolidinone substituent, 2909
 novel class, synthetic potential, 1679
 sterecontrolled hydrolysis to keto-acids, 3079
- Enones see Ketones**
- Enzymes**
 a crown ether flavin mimic, 1539
 amines, micelle enhanced oxidation by coenzyme F₄₃₀, 3465
 catalysed alkyl transfer reactions, stereochemistry, 147
 enzymatic formation of ajmaline, 2485
 fatty acid synthetase, inhibition by cerulenin, mechanism, 2673
 inhibitor of β -lactamases, 2559
 inhibitor of HMG-CoA reductase, (+)-monacolin K synthesis, 1811
 inhibitors of 5-lipoxygenase, dimethylheicosatrienoic acids, 2457
 lipoxygenase products, synthesis, 5185
 lipoxygenase catalysed allylic hydroperoxide + oxiranylcarbinol rearrangement, 4921
 metalloenzymes and metallocoenzymes, colloidal Pt for selective catalyst in reduction, 5005
 microsomal cytochrome P-450, synthesis of arachidonic acid metabolites, 33
 model for tryptophan-2,3-dioxygenase reaction, 213
 monooxygenase, intramolecular reaction of carbonyl oxide, formation of a K-region arene oxide, 2327
 new class of inhibitors of HMG-CoA reductase, key intermediate, 3769
 protein kinases, c-AMP-dependent, multisubstrate adduct inhibitors, 1121
 reduction of sulphonate by model of NAD(P)H, 2001
 spermidine synthase reaction for distinguishing between single and double displacement, 151
 synthesis of 7,7-dimethylheicos-5 α ,8 α -dienoic acid and inhibition of 5-lipoxygenase, 5139
 system for conversion of vomilenine to ajmaline, 2485
- Esters**
 addition of α,β -unsaturated esters with higher order cuprates, 127
 alkenes, mono- and substituted, conversion to *trans*-vicinal diacetates, 4547
 alkylation of β -ketothioesters, use in synthesis of acyltetriconic acids, 5143
 alkylation of extended enolates from α -phenylthio crotonate esters, 2113
 allophanic ester models of carboxybiotine, base catalysed hydrolysis in acetonitrile - water mixtures, 3067
 allylic benzoate, intermediate in synthesis of ethyl chrysanthemates, correction, 375
 allylic carbonates and acetoacetates, C-O and C-C bond formation, Pd-catalysed decarboxylation, stereochemistry, 411
 aryl aci form esters of tris(fluoro-sulphonyl)methane, 87
 asymmetric synthesis of β -substituted α -ketoesters, 4967
 benzyl clavulanate, reactions under neutral, acidic and basic conditions, 2693
 by rearrangement of α -alkoxy hydroperoxides, 2363
 carbonyl group protection, by 9-fluorenylmethyl esters, 281
 carboxy esters, selective reduction in presence of N₂ and CN groups, 2575
 carboxylic esters, α,β -unsaturated, new synthesis, 2599
 chiral caronic esters, enantioselective synthesis, 103
 cleavage of cyclic (E)- α -trimethylsilylketoxime acetates, 4021
 cyclisation of *n*-methylene dicinnamates, MeO substituent effect and topoactic assistance by methylene chain, 4237
 dealkoxycarbonylation of E-3-phenyl-2-cyanopropenoic acid ester, 3835
 decarbalkoxylation of β -keto esters and prep of ketones, 4641
 direct synthesis of Z- α,β -unsaturated esters, 4405
 enantiomerically pure alkylacrylates, Ni(O)-catalysed cycloadditions with methylene-cyclopropane giving 3-methylene-cyclopentane carboxylic acid alkyl esters, 3599
 enol acetates, new prep, 3383
 ester enolate Claisen rearrangement of 2-butenyl-2-hydroxyacetate, 729
 esterification of carboxylic acids, new method, 3365
 ethyl azidoformate, new route to N-ethoxycarbonyl α -amino ketones, 593
 ethyl glyoxalate and diethyl ketomalonate via electrogenerated superoxide, 2223
 ethyl N-acetyl- α,β -dehydroalaninate, cycloaddition with 1,3-dipoles, 2193
 ethylenic, prep by reaction of allylic halides with Reformatsky Zn-compds in presence of Cu-salts, 2749
 extended enolate anions from γ -phenylthio-crotonate esters and reaction with electrophiles, 3391
 fluorodeamination of α -amino esters to β -fluoro esters, 57
 formation of perchlorate esters by perchlorination of alkenes, 1211
 fumaric diester, addition to azlactones of α -amino acid derivs, 189
 high pressure addition of activated diethylmalonate, diethyl methylmalonate and ethyl 2-methyl acetoacetate with sterically demanding enone acceptors, 3841
 hindered methyl esters with allylic or benzylic Br-substituents, fragmentation to olefins, 1475
 hydroesterification of alkynes to mono or diesters, 5691
 hydroxylation of γ -hydroxy α,β -unsaturated esters, stereoselective, 3951
 ketones from esters via selenoesters, 4355
 lactone synthesis via intramolecular alkylation of β -keto ester dianions, 253
 methyl propiolate, reaction with 1-vinylcycloalkenes, 241
 new pheromone, (E,Z)-2,13-octadecadien-1-ol acetate, 1007
 novel route to carboxaldehyde using methylthiomethyl *p*-tolyl sulphone, 5761
 nucleophilic ring opening, diethyl 1,1-cyclopropanedicarboxylate using Na₂Fe(CO)₄, 3/2 dioxane, 2803
 ortho esters of 2,6,7-trioxabicyclo-[2.2.2]octane series, synthesis, 5571
 photo deconjugation of β -alkyl- α,β -unsaturated esters, 4299
 preparation of α -bromoesters via half esters of malonic acids, 163
 preparation of λ^3 -phosphorinyl-carbon ester, 5051
 preparation of 3-oxo-2-propenoic acid methyl ester and isolation of 4-membered cyclic dimers, 5525
 preparation of saturated and unsaturated γ -ketoesters, 327
 propionates of chiral alcohols derived from camphor, diastereoselective alkylation, via lithium enolates, 3213
 protolichesterinic ester, synthesis, 695
 rearrangement of substituted allene sulphoxides to α,β -unsaturated thiol esters, 4463
 regioselective hydrogenation of 1,2,6,7,8,8 α,β -hexahydro- α -hydroxy-2-methylene-1 β -naphthaleneacetic acid methyl ester, synthetic pathway to compactin, 3687
 regioselective synthesis of β -keto esters, 5425
 regiospecific synthesis of γ -keto esters, 323
 route to (\pm)-methyl 5-epishikimate and (\pm)-methyl *cis*-3,4-dihydro-3,4-dihydroxybenzoate, 4745
 routes to 4-aryl-2-hydroxy-1-naphthoates and $\beta\gamma$ -unsaturated esters, 5453
 selenoesters, synthesis of α,β -unsaturated ketones, 4359
 stereoselective α -alkylation using chromiuntricarbonyl-complexed benzyl acetates, 2837
 substituent effect on acetylation of phenylethyl tosylate, 2177
 sulphur mediated alkylation of esters with alkenes, 1315
 synthesis of γ -acetoxy- α,β -unsaturated esters from saturated aldehydes, 4525
 synthesis of α -methylene- γ,δ -unsaturated esters from allylic alcohols, 1239
 synthesis of 2,3-dioxohexahydro-azepine-6-carboxylates, 1949
 synthetic utility of *p*-nitrophenyl 3-bromo-2,2-diethoxypropionate, 2059
 tertiary allylic acetates and

- propargylic acetates, reaction with silyl-cuprate reagent to give stereodefined allylsilanes and allenylsilanes, 4151
- total synthesis of 7-E,9-Z-methyl trisporate B, 2833
- triacetanol, synthesis, cross-metathesis of cyclododecene with methyl oleate or oleyl acetate, 2855
- unsaturated diesters or diketo esters from vinylketene silyl acetals, 785
- vinyl cuprate reagents, addition to carbonyl-derived enones and α,β -unsaturated esters, 2231
- vinyl, γ -allylation, 3761
- Ethers**
- aliphatic, aromatic and cyclic, cleavage by dimethylboron bromide, 2969
- alkylthium cleavage of allylic ether, chelation controlled stereoselectivity, 1361
- allyl and homoallyl trimethylsilyl ethers, epoxidation, 395
- allylic methyl ethers by UV irradiation of tetra-, tri- or diphenylallene in MeOH, 1107
- and thioether derivs from benzyl clavulanate, 2693
- aryl propargyl ethers in poly(ethyleneglycol), Claisen rearrangement, 5023
- benzyl ether protecting group removal by RuO₂ oxidation to benzoate esters, 3829
- branched chain mono glycerol ethers form Aaptos sp, 5699
- carboxamidomethyl esters as carboxyl protecting groups, 5219
- conversion of alkenes to allyl vinyl ethers, 4423
- cyclopropyl ethers from mono- and dimethoxy cyclohexa-1,4-dienes, 4425
- diosphenol allyl ether, conformationally rigid, axial allylation in Claisen rearrangement, 3
- direct preparation of t-butoxymethyl lithium from t-butyl methyl ether, 3165
- enol silyl ethers, formation of trichlorotitanium enolates with electron deficient double bonds, 3341
- furan addition to γ -iodoenolsilyl ether to afford ketone or enol silyl ether, 2727
- halomethyl alkyl and aryl ethers conversion to organolithium reagents (ROCH₂Li), 3163
- hydroxymethyl-21-crown-7 and hydroxymethyl-24-crown-8, synthesis, 1327
- isomerisation, 1-trimethylallenyl ether to 1-trimethylpropargyl ether, 1061
- MEM, MOM and MTM ethers, cleavage, 3969
- methyl and methylthiomethyl ethers, cleavage, 1189
- methyl thiomethyl ethers of alcohols, deprotection, new method, 4485
- new lipophilic ionisable crown ethers, complexation of K⁺, 457
- optimisation of polymer-supported oligoethers, solid-liquid phase transfer catalysts, 1661
- poly ether macrocyclic derivs of phenanthroline, 5091
- radical cations of ethene, ethine and cyclic ethers, prep, 2315
- regiospecific prep of thermodynamic silyl enol ethers, 1345
- resolution of dl isomers of bis(2- and 3-chloro-9-triptycyl)methanes and ethers, 791
- selective cleavage of β -methoxy-ethoxymethyl ethers using 2-chloro-1,3,2-dithioborolan, 3965
- silyl dienol ethers, aryl ratios in phenylthiomethylation, 2913
- silyl enol ethers, methoxycarbonyl alkylation and methoxycarbonylidenation, 327
- silyl enol ethers, reaction with β -halogenoalkyl aryl sulphides, 961
- silyl enol ethers, reaction with secondary benzyl acetate complexed by Cr(CO)₃, in presence of ZnCl₂, 2837
- synthesis of α,ω -dicarboxylic acids and unsaturated carboxylic acids from silyl enol ethers, 4439
- synthesis, 2,2-difluoro enol silyl ethers from chlorodifluoromethyl ketones, 507
- synthetic application of phenylthio- and phenylsulphonylmethyl ethers to aldehydes, methylals, carboxylic acids and enol or derived dienol ethers, 4993
- tetrahydropyranyl ether of (E)-3-bromo-3-trimethylsilyl-2-propen-1-ol, synthesis, 2055
- three aromatic glycol ethers, free enthalpies, thermal decomp, 185
- trimethyl- and t-butylidimethylsilyl enol ethers, regioselective reaction at 4-position of ethoxy carbonyl- or 2,2,2-trichloro-ethoxycarbonyl- pyridinium chlorides, 5269
- trimethylsilyl enol ethers, synthesis, 3851, 5695
- trimethylsilyl enol ethers, regioselective synthesis, 2787
- Wittig rearrangement of 2-octyl benzhydryl ether, effect of increased pressure on rate and stereoselectivity, 1381
- Exchange reactions**
- base catalysed H-D exchange of 5,6,7,8-tetrakis(methylene)-2-bicyclo[2.2.2]octanone-irontricarboxyl complexes, 1983
- enol boranes, exchange with N-trimethylsilyl imidazole, 5695
- intramolecular H-exchange in 2,3-dimethylbutane catalysed by Ni, 1119
- selective silyl/stannyl, prep of α -stannyl derivs of methyl ketones from silyl enol ethers, application to aldol reaction, 5001
- tin lead exchange, synthesis of aryllead(IV) triacetates, 1301
- Ferrocenes** see also **Iron compounds**
- cyclophanes incorporating 1,3-disubstituted ferrocene moiety, spectroscopy and X-ray, 5757
- Flavanoids**
- antibacterial flavanones from *Erythrina sigmoidea*, 4127
- direct conversion of flavenes to flavones, 4455
- first natural 4-aryl flavan-3-ol, 1825
- homoisoflavanone (\pm)-scillascillin, synthesis from phloroglucinol, 5581
- hydroxychalcone - flavanone interconversion, 2851
- induced deprotonation, ¹³C NMR, 177
- malc-yl flavone, of *Centaurea cyanis*, structure, 5749
- polyphenyl oligomers, new class of condensed tannins, 4627
- synthesis of isoflav-3-enes and isoflavans, 3993
- Flavins**
- analog bearing a crown ring as recognition site, prep, 1539
- flavinocyclophane, synthesis and structure, 1925
- oxidation of substituted N,N-dimethylanilines, thioanisole and methyl phenyl sulphoxides by 5-ethyl-4a-hydroperoxy-3-methyl-lumiflavin, 1265
- reduction of diaryl disulphide by BNAH promoted by 3-methylumiflavin, 5231
- substituted indolocarbazole system, synthesis of arcyria flavin B, 1441
- Flavylum salts**
- isoflavylum salts, use in synthesis of 3-phenylcoumarins, isoflav-3-enes and isoflavans, 3993
- Fluorene**
- preparation of 9-phenylfluorene, 9,9-diphenylfluorene and triphenylmethane, 71
- role of H bonding in reactions of fluorene promoted by F⁻ ion, 1097
- Fragmentation reactions**
- of hindered ester halides, olefin synthesis, 1475
- Free radicals** see **Radicals**
- Fulvenes and fulvalenes**
- fulvalene dication, bis-pyrimidal D_{2h} structure, stability, 1139
- fulvalene-like butatrienes, spectroscopic detection and polar structure, 2861
- heptafulvalene trianion radical structure, 1179
- synthesis of pentatriaeca-, pentapentadeca-, pentaheptadeca-, and pentanonadeca- fulvalene derivs, 5273
- Furans**
- addition of 4,6-dinitrobenzofuroxan, 2255
- addition to γ -iodoenolsilyl ethers to afford ketone or enol silyl ether, 2727
- alkylated tetrahydrofuranone, intermediate for synthesis of hexahydrofuro[3,4-b]furan deriv, 2335
- alkyne hexacarbonyldicobalt complexes, reaction with 2,5-dihydrofurans, 2905
- annulation of aromatic tertiary amides via 2-azaisobenzofurans as intermediates, 2945
- aryl propargyl ethers, conversion to 2-methylbenzofurans, 5023
- bromine-methanol oxidation of 5-(α -hydroxybenzyl) furoic acid to give hydroxypyrones, 3133
- bullatenone and gearparvarin new

XX

- syntheses, 2117
 deamination of indolenines and reduction to hexahydrodibenzofurans, prep, 4987
 dibenzofuran cannabifuran, synthesis, 101
 disubstituted endo tricyclo lactones, transformation into 3,5,5-trialkyl-2H(3H)-furanones, 1929
 furan diene, intermolecular Diels-Alder reaction, new synthesis of 11-keto steroids, 3145
 furans and 2-furanones, one-step synthesis, 3877
 generation of 1-seleno-allyl cations and reactions with furan, 3911
 halotrimethylsilane cleavage of 2,5-dimethoxytetrahydrofurans, 1225
 hydromagnesiation to 3-furanyl-trimethylsilane, 1809
 intramolecular H-abstraction in 26-hydroxy-furostans, 4621
 one-pot synthesis of 4,5-dihydro-furans, 1715
 perhydro furo-(2,3-6)-furan derivs, prep, 4307
 photooxidative decarbonylation of 5-methylfurfural, cyclic and acyclic pathways, 1193
 preparation of 2-(diphenylmethyl)-tetrahydrofuran or 2-(diphenylhydroxymethyl)tetrahydrofuran, 461
 preparation of 2-methoxy-2,5-dihydrofurans, 1061
 prostacyclin analogs, stable, synthesis, 47
 putative dimer of 2-methyl-3(2H)-furanone from marine alga, 4063
 reaction of alkylacetylenes with 4-phenylloxazole to 3-substituted furans, 2473
 rifamycin, naphthofuranone chromophore, synthesis, 2331
 synthesis of 2,5-disubstituted furans, 5441
 synthesis of 3(2H)-furanones, 2079
 synthesis of 5,6-dihydro-4H-cyclopenta[b]furan system, 47
 synthon for substituted Δ^2 -butenolides, use of 3-alkyl-furans, 5835
 tetrahydrofurans, substituted, stereochemically controlled approach, 2889
- Furazans** see 1,2,5-Oxadiazoles
Furoxans see 1,2,5-Oxadiazoles
- Geometry**
 apical Me group in stable δ -ammoniomethylsulphurane, 4859
 of heptafulvalene trianion radical, 1179
 of pentaprismane and hexaprismane, molecular mechanics calculations, 3697
- Germanium and compounds**
 derivs of *cis*-4-alkylcyclohex-2-ene, stereospecific γ -anti-trifluoroacetylation, 5789
 derivs of uracil and 5-fluorouracil, synthesis, 1707
 preparation of isolable germirenes, 4083
- Gibberellins**
 chemical and microbiological synthesis, beyergibberellin A₉, 1945
 gibberellin A₁, synthesis of a 19 + 10 thiolactone analog, 351
 inhibitors, 19-norgibberellin-16-enes, 1941
- Glycols**
 enantiomeric composition of chiral 2-substituted-1,2-glycols via ^{13}C NMR and HPLC, 3551
 enantiomeric purity of RCHOHCH₂OH, 3547
erythro and threo glycols by reduction of α -hydroxy ketones, 2653
 glycolates, O-protected enolate Claisen rearrangement, 5177
 methane sulphonates of 1-O-benzoyl-1,2, -1,3, and -1,4-glycols, nucleophilic displacement, 4233
- Glycosides** see also **Carbohydrates**
 mycosporine reduced glutamine and glucoside, isolation and structure, 65
 pyridyl thioglycosides, C-glycosidation, 2715
 reduction of glycosyl halides by tributyltin deuteride, 3075
 stereoselective synthesis, appropriate intermediates, 361
- Grignard reagents**
 addition of propiolic acid to MeMgI to form *Z*-isomer of 3-iodoacrylic acid, 3973
 addition to N,N-diethylsorbamides, 5089
 addition to O-trimethylsilylated cyanohydrins, 4075
 carboxylic acids, reaction with Grignard reagents prep of diaryl and alkyl-aryl ketones, 3677
 coupling with allyl alcohols using 1-chloro-2-methyl-N,N-tetramethylene propenylamine, 5745
 formylation with N-formyl amines, role of chelation, 1143
 hydrogenolysis of vinylic sulphones to olefins, 4311
 reaction of 3-phenylpropen-1-yl magnesium chloride with benzaldehyde, stereochemistry, 1427
 reaction of 4,6-O-benzylidene-3-O-mesyl-allyl with allylic Grignard reagents, 3505
 reaction of CH₂(MgBr)₂ with Cp₂TiCl₂, formation of 4-membered titana heterocycles with alkenes and alkynes, 3935
 reaction with 1,3-alkadien-2-yl phosphate, synthesis of conjugated dienes, 5137
 regioselectivity of reaction with N-methoxycarbonylpyridinium chloride, 1801
- Halogen compounds**
 abnormal amide group cleavage in N-substituted 4-carbamoyltetradecachlorotriphenylmethyl radicals, 2121
 addition of HF to 1-phenyl-9-azabicyclo[6.1.0]nonane to give fluoroamines, 5877
 alkenyl halides, reduction with Cr Cl₂ to organochromium species, 5281
 alkyl halides reaction with trans-hyponitrite ion, 451
 alkyl halides reaction with aqueous thiocyanate ion in stirred, un-stirred and sonicated solns, 1585
 alkyl halides, reduction by LiAlH₄, AlH₃, one electron transfer agent, 2825
 alkylmagnesium bromide reaction with 7-oxa-bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic anhydride, formation of α -furyl- γ -ketoacids, 5519
 allylic halides, reaction with Reformatsky Zn compds in presence of Cu-salts, 2749
 allylsilanes from allylchlorides and silycuprates, 5785
 and steric factors, effect on cycloaddition of diazoalkanes to 7-halonorbomadienes, 1387, 1391
 anodic oxidation of enol acetates in presence of Et₃N, 3HF, 903
 availability of CF₃-P(N-Et₂)₂ an adduct for phosphanes containing CF₃-group, 5509
 benzyl halides, catalytic phase transfer carbonylation with iron pentacarbonyl, 4005
 bicyclic aminoacids diastereoselective synthesis via ring contraction of α -chlorolactams, 5339
 bis-trifluoromethyl-sulphine, synthesis and properties, 2141
 bromination of 3-methyl-2-thiacephems, 3283
 bromo compds of true sponge *Veronica aerophoba*, 3029
 bromohydrins, conversion to ketones, 2669
 chlorination and cyclodehydration, of 1,2-diols, 661
 chlorination of 1-t-butyl-1,3-dichloro- λ^3 -phosphorin, 2645
 chlorination of 3- α -cholestanyl-trimethylammonium cation by iodobenzenesulphonate anions, 5039
 chlorination of alkoxythiocarbonyl-sulphenyl substrates, 5683
 chlorine compds, core-ionised electron relaxation effects, quantification, 2537
 chloroformates, reaction with tertiary amines, competitive N-demethylation, deamination, N-debenzylation and N-deallylation, 3233
 chloromethylation of aromatic compds, 1933
 cohalogenation of α , β -ethylenic ketones, 1967
 coupling of benzyl halides with acyl halides to form benzyl ketones, 2451
 debromination of 1,2-dibromides with poly(styrylmethylthiol), 3913
 dibromocarbene and dibromocarbonyl ylides, deoxygenation of aldehydes and ketones, 2829
 dichlorocyclo-butanones and α -acyloxy- α' -chlorocyclobutanones, reaction with nucleophiles, 1135
 diene formation by ene-type chlorination and dehydrochlorination to form citral from diprenyl ether, 5737
 directed steroid chlorination by ion-paired template, 5039
 electrophilic perchlorination of alkenes, 1211
 erythro selective aldol reaction of α -trichlorostannyl ketone, 3347
 esters derived from N-hydroxy-

- pyridine-2-thione and CCl_4 , C
 Cl_2Br or CHI_3 , radical chain
 reaction to noralkyl chlorides,
 bromides or iodides, 4979
- fluoride ion activated fluorene,
 alkylation and oxidation, 1097
- fluorinated kanamycin A derivs,
 synthesis, 1763
- fluorinating agent Et_3N , $3HF$, new
 route to α -fluoroketones, 903
- fluorination of 6-O-cyclouracil
 nucleosides, 1055
- fluoroacetate poisoning of insects,
 2461
- fluorodeamination of α -amino esters
 to β -fluoro esters, 57
- formation of butylbenzene from 1-
 chlorobenzvalene, 891
- formation, dichloroketones and
 terminal vinyl dichlorides, 527
- free radical halogenation of L-
 tryptophan with N-chloro- or N-
 bromo-succinimide, 5555
- gem difluoroolefins from chloro-
 difluoromethyl ketones, 5657
- geminally functionalised cyclo-
 propanes via 1,3-dehydrohalo-
 genation of α -halo ketimines, 2885
- geranyl and farnesyl halides,
 reductive coupling by chlorotris-
 (triphenylphosphine)cobalt(1),
 921
- haloalkylethyl- β - and α -enamino
 ketones, photocyclisation
 yielding C- and N- cyclised
 products, 5567
- haloboration of 1-alkynes, prep of
 [Z]-1-alkynyl-2-halo-1-alkenes,
 735
- halogenated norcaradienes, hydrolysis
 with relevance to occurrence of
 benzocyclopropanes, 4747
- halogenation of quinoxalino[2,3-
 c]cinnolines by hydrogenhalides,
 3151
- halohydrins, new synthesis, 1307
- halotrimethylsilane cleavage of 2,5-
 dimethoxytetrahydrofurans and 2,6-
 dimethoxytetrahydropyrans, 1225
- homomallylic chloroformates, intra-
 molecular carboalkoxylation,
 synthesis of α -methylene- γ -
 butyrolactones, 4687
- imidoyl iodides via oxime
 sulphonates, 3255
- iodo, bromo or tosyl amino acids,
 reaction with R_2CuLi , without
 configurational change, 3717
- new brominated metabolites from red
 seaweed, X-ray structure, 4143
- new halogenated compds, digestive
 gland of sea hare, 847
- new reaction of 1,1-dichloro-2-
 halomethylcyclopropanes in basic
 medium, 1065
- new S- or Se-substituted halo-
 butadienes, reactivity, 447
- new series of 2-haloethyl-carboxy-
 sulphamides and -oxosulphonyl-
 enes, prep, 3091
- olefins via reductive debromination
 of vic-dibromides, 3001
- organic halides, Pd-catalysed
 carbonylation to unsymmetric
 ketones, 3869
- photodehalogenation of haloaromatic
 hydrocarbons, amine assisted,
 5673
- PhSeCl as chlorinating agent for
 benzene derivs, 2077
- precursors of fluoro- α , β -enones,
 prep, 4229
- propargyl halides and 1-halocyclo-
 propenes by dehalogenation of
 trihalopropanes with $MeLi$, 605
- pulverised KOH, reaction with 3-
 bromo-2-bromomethylpropionamides
 gave 3-methylene-2-azetidiones,
 and conversion to 3-methylene-2-
 azetidinetiones, 3725
- pyrolysis of o-methoxybenzylidene
 chloride, formation of benzo-
 furan, anthracene or 1-chloro-
 benzocyclobutene, 609
- radical cations of polyfluoro-
 aromatic compds, conversion to
 dihydroaromatic products in
 presence of fluoride and chloride
 anions, 4875
- reaction of 1,2-dimethyl-1-cyclo-
 butene with HF to 2,4-difluoro-2-
 methylpentane, 1147
- reaction of 2,2-disubstituted
 cyclopentanones with Br and
 alkali, 4625
- reaction of polyhaloarenes as di-
 aryne equivalents, dilithiation
 mechanism, 5721
- reactions of $AgBF_4$ with 1-bromo-
 and 1-chloro-1,2-dimethylcyclo-
 butane as well as 1-bromo- and 1-
 chloro-1,3-dimethylcyclobutane to
 give 4-fluoro-2-methyl-1-pentane,
 1147
- reductive debromination of vic-
 dibromides to olefins, 3001
- remote halogenation as key step in
 degradation of sterols, 3199
- secondary amines, reaction with 1-
 halo- and 1,4-dihalotri-
 quinacenes, 4563
- selective and stereocontrolled
 umpolung of aryl and vinyl
 halides to trimethylsilyl derivs,
 4895
- selective synthesis, 2-bromo- and 2-
 iodo-1-alkenes, 731
- selenium dioxide oxidation of 3-
 methyl-4,5,6,7-tetrafluoro-
 indoles, intermediates in
 synthesis of tetrafluoro analogs
 of tryptophan, tryptamine and
 indole acetic acid, 4573
- silicon substituted cyclopropyl-
 carbonyl trifluoroacetate
 solvolytic behaviour, 4931
- site-selectivity in chlorination of
 electron-rich aromatic compds by
 N-chlorammonium salts, 3117
- spiroannulation via gem-dihalocyclo-
 propanes and cyclocuprate
 species, 5767
- stannylation of 1-bromo- and 1-
 chloro-4-iodo-4-iodo[2.2.2]-
 octane, abnormal leaving group
 mobility ($B>I>Cl$), 5901
- stannylenes and germylenes, powerful
 dechlorinating agents, route to
 diphosphene, 4219
- substituted α -bromoketones,
 reaction with $i-Pr_2NLi$, 4207
- syn dehydrohalogenations from trans-
 1-bromo-2-chlorocycloalkanes by
 complex base or by $t-BuOK$, 2737
- synthesis of β -trifluoromethyl-
 pyrroles, 929
- synthesis of (\pm)-aplystatine,
 polycyclisation via bromohydrins,
 5515
- synthesis of 1,1-dichloroalkenes,
 using α -lithiated dichloromethyl-
 trimethylsilane and aldehydes,
 4727
- synthesis of enantiomerically pure
 bromide, precursor of (+)-
 anamarin side chain, 587
- synthesis, 2,2-difluoro enol silyl
 ethers from chlorodifluoromethyl
 ketones, 507
- tertiary, allyl and benzyl halides,
 selective reduction by Zn-
 modified cyanoborohydride in
 ether, 3369
- tetrabromoarenes, attempts to
 polyolithiate, 5725
- trans bromohydrin acetates,
 formation from polycyclic
 aromatic hydrocarbons and
 conversion to cyclised arene
 oxides, 4903
- trans difluoroolefins, prep from
 chlorotrifluoro-ethylene, 5615
- trichlorinated γ -butyrolactones,
 regio- and stereoselective
 synthesis, 2395
- trichlorotitanium enolates,
 formation and aldol reaction,
 3341, 3343
- trifluoroacetylation of 4-alkylcyclo-
 hex-2-enyl-silanes-germanes and
 -stannanes, 5789
- tritylpotassium, new dehydro-
 halogenation agent, 2449
- vinyl fluorides and fluoroaromethyl
 ketones, synthesis, 725
- vinyl iodides, prep, 1605
- Wittig reaction of 2-halopent-2-
 enals with dibromo-methylene
 triphenyl phosphorane, 3387
- (Z)-haloalkenes stereoselective
 synthesis, 565
- Zn catalysed cross coupling of
 allyl halides with allyltin, 1905
- Hormones**
- fungal prohormone methyl tri-
 sporate, stereo- and chemo-
 selective approach to synthesis,
 2833
- prohormone of *Blakeslea trispora*,
 synthesis of methyl 4-dihydrotri-
 sporate, 3709
- typhasterol, plant growth hormone,
 structure, 3859
- Hydrazones**
- of ketones, improved prep of vinyl
 iodides, 1605
- Hydrindanes**
- route to trans-hydrindane systems,
 3819
- Hydrocarbons**
- aliphatic and alicyclic saturated,
 activation of C-H bond, 1979
- cyclic having torus structure,
 stereochemistry, 3187
- deprotonation with $n-BuLi/Na(K)O-t-Bu$,
 leads only to Na- and K-
 compds, 5477
- pagodane an undecacyclic $C_{20}H_{20}$ -
 polyquinane, synthesis, 5857
- structure of three botryococenes,
 $C_{30}H_{50}$, $C_{31}H_{52}$ and $C_{32}H_{54}$, 4013
- Hydroperoxides**
- benzylazobenzene α -hydroperoxides,
 substituted, epoxidation of 2,3-
 dimethyl-2 butene, 123
- Criegee rearrangement of α -
 alkoxyhydroperoxides to esters
 and lactones, 2363
- transformation of α -azobenzyl
 hydroperoxide into benzoic acid,
 3109
- Hydroxylamines**
- reaction of N-mono and N,N-di-

- substituted hydroxylamines with Pd catalyst, 1049
rearrangement of N- to O-(diphenylphosphinyl)hydroxylamine, 3115
- Imidazoles**
benzimidazole intermediate, reduction of 4-arylmethyleneisoxazole-5-ones to 4-arylmethylisoxazole-5-ones, 5893
controlled, oxidation of tetraaryl- $\Delta^2,2'$ -biimidazolines by triplet oxygen in presence of fluorescers, 2307
electrophiles and oxidants, reaction with 2,4-bis-dimethylaminoimidazoles, 3563
enol boranes, exchange with N-trimethylsilyl imidazole, 5695
imidazole and N-methylimidazole reaction with 4,6-dinitrobenzofuroxan, σ -complexes, 493
preparation of 8-bis(dimethylamino)phosphinyl-2,3a-diphenyl-1,3a-dihydrocyclo-heptimidazole, 2039
reaction of 1,1'-thiocarbonyldimidazole with aldonitrone, 4927
- Imides**
maleimide derivs, cyclisation and H-abstraction, 1841
photoreduction of N-methylphthalimide by 2,3-dimethyl-2-butene, directive effect of substituents, 1879
phthalimides, intra- and intermolecular reactions, 143
synthesis of N(3-butenyl)imides and reduction, 91
unusual behaviour of N-bromo-succinimide, reaction with N,N-dimethylamides, 2685
- Imines**
activation of OH proton and substituent induced thermal 1,3-dipole formation, 4363
acyclic ketimines, regioselective deprotonation, 3559
acyl imines, intramolecular ene reaction to N-heterocycles, 1581
cyclopropylpyrrolines from dicyclopropyl ketimines, 3409
deprotonated ketimines as methyl ketone aldol equivalents, 2481
detection of imino H-bond in G-C pairs by ^1H and ^{15}N NMR, 4067
naphthylidene imine of methyl(1-cyclopentenyl)glycine, double bond isomerisation and 1,5-electro-cyclisation, 1201
reduction by cluster $[\text{Fe}_4\text{S}_4(\text{SR})_4]^{3-}$, 5113
strained bridgehead imines by photolysis of bridgehead azides, 3887
- Indazoles**
indazolols by dis proportionation of N-nitroso-N-substituted isatinic acids, 3651
- Indenes**
bicyclic enamines, hydrolysis to cis or trans 4-carboxy-3a,4,5,6-tetrahydro-1-indanones, 907
methanoindene in synthesis of *dicorliol*, 4267
synthesis of (3aS)-1,3a-dimethyl-2,3,3a,5,6,7-hexahydroinden-4(SH)-one, intermediate in steroid synthesis, 3175
- synthesis of 2-alkyl-2-ethoxy-carbonyl-1,3-indanediones, 3071
- Indoles**
alkaloid potential intermediates, prep of 2-alkyl indoles, 3531 and N methyl derivs, addition of 4,6-dinitrobenzofuroxan, 2255 bearing a variety of substituents in 8-position, synthesis, 1259 by cyclisation of α -azidophenylalkenes, 5169
deamination of indolenines, application to mesembrane series, 4983
deamination of indolenines and reduction to hexahydrodibenzofurans, 4987
genotoxic streptindole structure, 4719
indole ring, mechanism of Co(salen)-catalysed oxygenolysis, 213
indolizidines, biomimetic synthesis, 3281
isoindoles, reaction with aldehydes in presence of metal salts, yielding metallo-tetrabenzoporphyrins, 1451
new indoline skeleton, (+)-melonine and Nb-oxy melonine, 761
new versatile synthesis of 4-nitroindoles, 3665
preparation, 3-formyl- and 3-acetoxymethyl-4,5,6,7-tetrafluorindoles, synthetic intermediates, 4573
preparation, simple procedure, 4561
quinodiazide intramolecular photo-addition, 4773
reduction of 2,3-dialkyloindoles containing tertiary amines, stereochemistry, 1115
selenium dioxide oxidation of 3-methyl-4,5,6,7-tetrafluoroindoles, intermediates in synthesis of tetrafluoro analogs of tryptophan, tryptamine and indole acetic acid, 4573
stable 4-(phenylsulphonyl)-4H-furo[3,4-b]indole synthesis, 5435
stereochemically complementary reductions, 2469
structure of 1-acetyloctahydroindole-2-carbonitrile, 5347
substituted 3-methylene isoindolones, prep, 143
tetrabenzoporphyrins, versatile synthesis from isoindoles and aldehydes, 1451
tryptamine, melatonin, indolebutyric acid amide, new synthesis, 1259
versatile process to 3-substituted indoles from anilines, 2437
- Indolizidines**
elaboration of benzo[e]indolizidine framework, 2881
- Infra red spectra**
germination self-inhibitor, gloeosporone, 5059
novel 3,5-diarylpyridones, 2973
phthalide, photofragmentation in low temp matrices, 4373
- Insecticides**
activity of cyanolipids, 4447
deltamethrin, synthesis from intermediate rac cis chrysanthemic acid, 2103
new stereocontrolled synthesis of (+)-pederine, 1277
- of pyrethrins and deltamethrin constituents, synthesis, 103
pluridone, isolation, structure and synthesis, 5563
- Insertion reactions**
alkyldimesitylboranes, C-alkylations, 627
amphiphilic carbene into activated C-H bonds, 4199
intramolecular, α -alkoxycarbonyl, α -sulphonyl carbene into N-H bond of azetidinone, 4731
of methylene into C(6)-C(7) bond, reaction of 6-sulphenimino-penicillanic ester with diazomethane, 3419
of strained olefins and CO onto Pd-C bonds, 813
syn stereospecificity and SO_2 insertion into 4-and 6-alkylcyclohex-2-enyl trimethylstannanes, 5793
thiophene-inserted compd of diphenylcyclopropenone, 205
trilanes, Si-Si bonds, insertion of alkanal CO and 1,3-diene units, 4109
vicinal O-protected azidoalcohols, reaction of epoxides on Me_3SiN_3 , 4189
vinylidene carbene into C-H bond of alkoxides, 5665
- Iridoids**
isoiridomyrmecin, synthesis, 4543
secoiridoid precursors synthesis, 3323
simple with W=H, synthesis, 5797
- Iron and compounds see also Ferrocenes**
adducts of TMS-ethanol keto-esters and cyclohexadienyl-Fe(CO) $_5$ salts, decarboxylation, 5781
base catalysed H-D exchange of 5,6,7,8-tetrakis(methylene)-2-bicyclo[2.2.2]octanone-irontricarboxyl complexes, 1983
catalysed synthesis of arylenes, 5449
disengagement of organic ligands from ironcarbonyl complexes, 1615
iron carbonyl-diene complex of 1,1,3,4-tetramethylsilole, 3521
iron pentacarbonyl carbonylation of benzyl halides, 4005
nucleophilic ring opening of diethyl 1,1-cyclopropane dicarboxylate using $\text{Fe}(\text{CO})_5$, 3/2 dioxane, 2803
organoiron complex, direct carbomethoxymethylation, 2465
reduction of imines by cluster $[\text{Fe}_4\text{S}_4(\text{SR})_4]^{2-}$, 5113
resolution of 2-methoxytricarboxylcyclohexadienyliron hexafluorophosphate, 2491
stable bis π -allyliron dicarbonyl complex IV, structure, 1611
- Isocyanides**
cyclohexene epoxide, ring opening to 2-hydroxycyclohexyl isonitrile, 655
- Isomerisation**
acid catalysed isomer of longifoline, alloisolongifolene, 2411
isomerisation of β -trimethylsilyl alcohols, Rh catalysed, 2787
isomerisation of 5-substituted

- pyrrolidine-2,4-diones to exocyclic Δ^2 ,⁶-isomers during O-acylation, 4755
- of adducts of allenes with benzeneselenenyl halides, 2689
- of primary allylic alcohols to tertiary by means of $\text{Me}_3\text{SiOOSiMe}_3$ -VO(acac) catalyst, 3741
- one way photoisomerisation, *cis*- and *trans*-1-(2-anthranyl)-3,3-dimethyl-1-butene, 2873
- photosensitised *cis*-9-styrylacridines, high enthalpy value in thermal isomerisation, 3903
- resolution and *dl* isomers of bis(2- and 3-chloro-9-triptycyl)methanes and ethers, 791
- separation of stereoisomers of bis(2,6-dichloro-9-triptycyl)-methane, 5359
- singlet O_2 induced *cis trans* isomerisation, conjugated acyclic hexadienes, 3303
- stereoisomers of [2,1] paracyclophanehexaene, synthesis and interconversions, 5411
- tertiary hexa-1,5-dien-3-ols substituted on C5, isomerisation to δ -ethylenic ketones, 1157
- thermal of 2-fluoro-1-methylene-cyclopropane, 1217
- trans* bicyclo[4.4.1]hept-3-ene to *cis*-isomer, 3431
- trimethylsilylallyl ether to 1-trimethylsilylpropargyl ether, 1061
- Isoquinolines** see **Quinolines**
- Isoquinolidines**
- amino Claisen rearrangement of N-(β -ketovinyl)isoquinolidenes, 1021
- intermediate for synthesis of catharanthine, 2927
- Isotope effects**
- kinetic isotope effects, reaction of N,N-dimethylaniline and benzoyl peroxide, 1459
- Isoxazoles**
- isoxazole ring transformation, 5-oxidopyridazinium betaines, synthesis, 1285
- reduction of 4-arylmethylene-isoxazole-5-ones to 4-arylmethylisoxazol-5-ones, 5893
- ring transformation of 4-aminoisoxazole into triazole, 3149
- Isoxazolines**
- from cycloaddition of nitrile oxides to Z- and E-disubstituted olefins, regiochemistry, 1337
- irradiation of 3-aryl-2-isoxazolines with methylated benzenes, 2279
- isoxazoline route to α -methylene lactones, 2623
- oximes of 3-alkyl-3-(1-hydroxycyclopentyl)alkan-2-ones from 4,4-dialkylisoxazol-5-ones and 1,4-di(bromomagnesium)butane, 2991
- reduction of Δ^2 -isoxazolines, 2079
- Ketals**
- functionalised ketals, ketal Claisen rearrangement, 4397
- of benzyl 7-t-butylidiphenylsiloxy-4-oxo-2-octenoic acids, precursor of pyrenophorin, 4283
- synthesis, 6-alkyl-6-methoxycarbonyl-2,4-cyclohexadien-1-ones and cyclohexadienone ketals, 1369
- Ketenes**
- cycloaddition of keteneiminium salts to olefins, stepwise mechanism, 2251
- dichloroketene cycloaddition to bridged bicyclic olefins, 3811
- dichloroketene with vinyl- and alkynylsilanes, 23
- diphenyl ketene, reaction with N-acylsulphilmines, 2811
- first phospho ketene, properties, 2639
- haloketenes, reaction with 5H-cyclohept[alazulen-5-ones, 781
- methyl- and ethyl-vinylketenes, conversion to alkylated 2-vinylcyclobutanones, 4817
- route to α -keticenyl esters, 5525
- Ketones**
- acetylenic, from thiol esters and 1-alkynyl-trimethylsilanes, 5131
- acyclic, stereoselective reduction, synthesis of synthons with three consecutive chiral centers, 2661
- acyloins, synthesis, 4075
- addition, α,β -unsaturated carbonyl compds with tris(trimethylsilyl)-aluminum, 45
- addition, dialkyl cuprate reagents to alkylcyclopropyl ketones, 5521
- adducts with 1-lithio-1-benzene-sulphonyl-2-trimethylsilyl-ethane, prep of *trans*-3-(trimethylsilyl) allyl alcohols and *trans*-4-(trimethylsilyl)-3-alken-1-ols, 2371
- aldehydes and acyl chlorides, reaction with 2-trimethylsilylthiazole, 2901
- aldol reaction with cerium enolates, 5233
- alkylation of α -silylated enolates of ketones by chloro, α -(phenylthio or arylthio) ketone to thio substituted 1,4-diketones, 2095
- alkylation of α -silylated enolates with methyl α -chloro- α -phenylthiocyanate saturated γ -keto-esters, 323
- allenic ketones, reductive cyclisation, formation of functionalised 5-membered rings, 4617
- allylation via allyl enol carbonates, Pd catalysis, 1793
- allylation via enol acetates, 4713
- alpha-alkenyl equivalent, α -(1-trimethylsilylalkyl) ketone, 4241
- and acetonides, by transformation of epoxides with electrogenerated acid catalyst, 2857
- aromatic, asymmetric reduction with borane-amine complexes, modified with optically pure 2,2'-dihydroxy-6,6'-dimethylbiphenyl, 1513
- aromatic, hydroxylation with H_2O_2 in $\text{SbF}_6\text{-HF}$, 3095
- aromatic, NOE difference spectra, CO group, *s-trans* orientation to α -position of highest double bond character, 2367
- aryl ketones, α -substituted, improved synthesis, 5465
- asymmetric reduction of α,β -unsaturated ketones with chiral hydride reagents, 4123
- by conversion of alkanes via photooxidation with metal oxide semiconductors, 5071
- by conversion of nitro-olefins, 417
- by oxidation of olefins, effect of phase transfer catalyst, 5159
- by Pd-catalysed acylation of organozincs, 5181
- by reaction of bromohydrins with chlorotris(triphenylphosphine)cobalt(1), 2669
- by rearrangement of cyclopentane- and cyclohexane-carboxaldehyde, 4157
- carbonyl compds, β -arylthio-alkylation, 961
- carbonylated products formed by ring opening of diethyl 1,1-cyclopropanedicarboxylate using $\text{Na}_2\text{Fe}(\text{CO})_4$, 3/2 dioxane, 2803
- chemoselective reduction of aldehydes and ketone and between ketones with borohydride, 5367
- chlorodifluoromethyl ketones, synthesis of 2,2-difluoro enol silyl ethers, 507
- conalogenation of α,β -ethylenic ketones, 1967
- condensation of equivalent of hydroxy-acetaldehyde, approach to vicinal polyols, 5869
- condensation with anions generated α -to dimethylboron group, 635
- condensation with succinic anhydride, 2211
- conversion of α,β -unsaturated ketones to olefins via allylsilanes, synthesis of 9(0)-methano- $\text{A}^6(9\alpha)$ -PGI₁, 3497
- conversion of α -amino acids into α -diketones, 2375
- conversion of racemic α -hydroxyketone into optically active form, 4209
- coupling of benzyl halides with acyl halides to form benzyl ketones, 2451
- cyclic, prep of thermodynamic silyl enol ethers using bromomagnesium dialkylamides, 1345
- cyclic, stereochemistry of reduction by alkali metals and by sodium dithionite, 2487
- cyclisation of 2-alkoxy-3-aryl cyclohexenones, 5887
- cycloalkenone or α -alkylidene-cycloalkanone by intramolecular acylation of vinyl silanes, 795
- cyclohexadienones to isotwist-8-en-2-ones, 147
- cyclohexanone, reductive alkylation with borane, Et_3N , 4951
- cyclopentadienones, reaction with silaalkenes, 1477
- cyclopentadienones, reaction with bifunctional dienophiles, 4087
- cyclopropanones, reaction with cyanmethylenephosphoranes, 2977
- cyclopropyl tetracyclic, selective cleavage, 681
- deoxygenation, by reaction with dibromocarbene and formation of CO, 2829
- development of chiral β -dicarbonyl equivalents, 2733
- diaryl and alkyl-aryl, from carboxylic acids and Grignard reagents, Ni(II)-phosphine catalysis, 3677
- diazomethyl, intramolecular cyclisation, 3921, 5919
- Diels-Alder reactions, 2-carbomethoxy-4,4-dimethylcyclo-

- pentenone, 1353
 direct conversion to α,β -unsaturated carboxylic esters, 2599
 displacement reaction, fused α -acyloxycyclobutanones to α -methoxycyclobutanones, 1135
 effect on addition of trimethylsilyl cyanide to α -substituted ketones, effect of catalyst, 4559
 effective metal promoters for reductions with tetra-*n*-butylammonium octahydrotriborate, 4955
 enol forms of 1,2-cyclohexadiones photo-oxygenation, 803
 enol triflates, prep from regio-specifically generated enolates, 979
erythro selective aldol reaction of α -trichloro-stannyl ketones, 3347
 fluoromethyl ketones, prep, 725
 formation of α -diketones by nitro-aldol reaction of α -ketoaldehydes with nitroalkanes, 3063
 formation of 1,1,4,-tribromohex-1-en-3-one, by Wittig reaction of 2-halopent-2-enals with dibromo-methylene triphenyl phosphorane, 3387
 formation of pinacols from, mediated by samarium diiodide, 765
 from addition of furans to γ -iodoenolsilyl ethers, 2727
 from alcohols by means of $\text{Me}_2\text{SiOOSiMe}_3$, 2185
 from esters via selenoesters, 4355
 from secondary alcohols, 5009
 from secondary nitro compds, new Nef agent, 5227
 functionalised 1,7-dioxaspiro[5.5]-undecan-4-ones, prep using β -diketone precursors, 427
gem difluoroolefins from chloro-difluoromethyl ketones, 5657
 having δ,ϵ,π -functions, conversion to cyclopentanols by Zn-trimethylchlorosilane, 2821
 homologation by novel reagent, 573
 hydrolysis of α -chloronitriles to ketones, 5687
 isomeric γ,α -unsaturated ketones, prep, 4397
 isomerisation of tertiary hexa-1,5-dien-3-ols substituted on C5 to β -ethylenic ketones, 1157
 ketene acetals, cycloadditions with carbonyl compds, under pressure, 4613
 ketoalcohols and ketoaldehydes, prep from bicyclic diazenes, 4499
 key step in biosynthesis of clavulones, 3169
 lithium compd-ketone complex, orange colour, 4213
 lithium enolates, C-acylation by methyl cyanofornates, prep of β -keto esters, 5425
 MeO substituted Cookson's penta-cyclic cage ketones, [2+2]-cyclo-reversion, 5645
 methyl ketones α -stannyl derivs, generation from silyl enol ethers, 5001
 methyl ketones by oxidation of olefins, use Rh and Ru complexes for phase transfer catalysis, 5163
 methyl ketones from reaction of acyl chlorides with Tebbe reagent, 2169
 methylenation with titanocene methylene-Zn complex, 2043
 multiple anions of poly- β -carbonyl compds, acetylation with N-methoxy-N-methylacetamide, 1851
 new method for 2,2-diallylation, 3865
 nucleophilic acylation, 4907
 one-step synthesis of α,β -unsaturated ketones, 5639
 open chain keto(or aldehyde) enolates from β -hydroxy- α -phenylsulphenyl cyclohexanone derivs, 2083
 optically pure α -aryl and α -vinyl ketones, prep, 4997
 oxidation of α -hydroxyphenyl benzyl ketones is unsymmetrical benzils with DMSO/KOH, 3401
 Pd catalysed prep of α,β -unsaturated ketones from saturated ketones via silyl enol ethers, 5635
 photochemistry of 5-methyl-1,5-hexadien-3-one, wave length dependency, 2961
 photocyclodimers of 2-cyclo-alkenones, structures, 5851
 pinacolone lithium enolate, reaction with ethyl *p*-nitrobenzoate, 1667
 preparation by decarbalkoxylation of β -keto esters, 4641
 preparation of β -hydroxyketones and α,β -unsaturated ketones, 3239
 preparation of α,β -ethylenic and α,β - α' -diethylenic ketones with stereodefined substitution pattern, 5081
 preparation of α -methylene carbonyl compds from α -nitroketones or α -nitroesters, 3477
 preparation of λ^3 - and λ^5 -phosphorinyl ketones, 5051
 preparation of 2-vinylcyclobutanones and conversion to cyclopentanones, 4817
 preparation of gem-difluoro adducts, 4113
 preparation using 1-phenylthio-1-trimethylsilylethene, 95
 prochiral, reduction with chiral silane(III), 1573
 reaction with allylic arsonium ylides, 4419
 reaction with ethane-1,2-dithiol Mg and Zn catalysed to form thio-ketals, 169
 reduction by NaBH_4 , in absence of protic solvents, 1015
 reduction of α - $\text{Ph}_2\text{P}=\text{O}$ ketones, prep of *E*-isosaffrole, *E*-anethole, and fenculin, 5293
 reduction with $[\text{NaBH}(\text{OAc})_3]$, 273
 regioselective generation of potassium enoxyborates from 2-methylcyclohexanone, 1341
 regiospecific reaction of α,β -unsaturated carbonyl derivs with Cu reagents derived from 2-(1,3-butadienyl)magnesium chloride, 1003
 regiospecific synthesis, α -phenyl- α -(phenylthio)ketones and α -(phenylthio)cycloalkenones, 117
 retroaldol reactions of β -hydroxy- α -phenylsulphenyl cyclohexanone derivs, 2083
 route to masked 1,4-diketones, 1871
 saturated and conjugated, reaction with chlorotrimethyl silane and Ac_2O yielding enol acetates, 3383
 selective reduction of ketones and carboxy esters in presence of NO_2 and CN groups, 2575
 selective silyl/stannyl exchange and its application to aldol reaction, 5001
 selenoesters, synthesis of α,β -unsaturated ketones, 4359
 singlet oxygen reaction with 1-acetyl-2-methoxycyclopentene, 5189
 stereocontrol on photo behaviour of α -methoxy- β,γ -cyclopropyl cyclic ketones, reactions of epimeric 3-methoxy-4-caranones, 3917
 stereocontrolled synthesis of *E* and *Z* isomers of γ,δ -unsaturated ketals by Horner-Wittig reaction, 2603
 stereoselective α -alkylation using chromiumtricarbonyl-complexed benzyl acetates, 2837
 stereoselective axial addition of ethynyl carbanions to $\text{C}=\text{O}$ of cyclohexenones, 4887
 stereoselective reduction of α -hydroxy ketones, 2653
 stereoselective synthesis of β -hydroxycarbonyl compds, 1337
 substituted α -bromoketones, debromination or addition of SiMe_2Cl , 4207
 synthesis of α,β -unsaturated ketones, from ketones, Pd catalysis, 1797
 synthesis of α -trimethylsilyl ketones, and rearrangement to trimethylsilyl enol ethers, 3851
 synthesis of 2,5-dimethyl-4-hexen-3-one, *E*-6-methyl-2-hepten-4-one, *E*-7-methyl-4-octen-3-one and AR-turmerone, 3927
 synthesis of enones via α -(phenylthio)-ketones, 3927
 synthesis, β,γ -unsaturated ketones, 399
 synthesis, N-ethoxycarbonyl α -amino ketones, 593
 tri and tetra substituted α,β -unsaturated methyl ketones with *Z*-geometry, 2481
 unsaturated, reaction with thio-enolates, C-versus S-1,4-addition of disubstituted dithioester thioenolate, 4203
 unsymmetrical monoprotected α -diketones, synthesis, 2361
 unsymmetrical, synthesis, 3869
Kinetics
 acid induced decomp of 7-substituted 3-diazo-2-norbornanones, 2423
 base catalysed hydrolysis of allophanic ester-models of carboxybiotin in acetonitrile/water mixtures, 3067
 benzoyl cyanides, solvolysis in methanol-acetonitrile and methanol-acetone, 4723
 carbenium ion- caranion co-ordination, C-C bond formation, 3299
cis trans isomerisation of cyclopropanes, comparison of capto-dative and dicapto radical stabilisation, 2765
 cycloaddition of cyclooctyne to N-containing heterocycles, 1481
 decelerated Me transfer from δ -ammoniomethylsulphurane compound with corresponding methyl-sulphonium salts, 4859
 halophenylcarbenes to alkenes, rate constants, 5313
 nucleophilic displacement of P-C1

- bonds with different nucleophilicities in 5-membered, 6-membered and acyclic chlorophosphates, 4323
- rate-equilibrium relationships, breakdown, 835
- reaction between *N*-ethylmaleimide and hydroxymethylanthracene in water and in acetonitrile, 1901
- reduction with NAD(P)H model bearing divalent S atom in *N*-alkyl substituent, 5123
- silicon substituted cyclopropyl-carbinyl trifluoroacetate solvolytic behaviour, 4931
- solvolytic of Si-substituted cyclopropylcarbinyl trifluoroacetates, 4931
- ultrasonically enhanced reaction rates of 2-chloro-2-methylpropane in EtOH, effect of temp, 4371
- versus thermodynamic acidity of α -sulphonium protons, 839
- Labelled compounds** see also **Isotope effects**
- deuterium incorporated into 2-*n*-hexyl-5-*n*-propylresorcinol, Eu(fod)₃-shifted ²H NMR as probe chirality, 5261
- deuterium labelling of 1-dodecanol vacillating reaction, example, 689
- deuterium labels, introduction into β - and γ - positions of 1,3-diepoxy-carbonyllylidene-triphenylphosphonium ylide, 743
- Lactams** see also **Azetidines**
- bicyclic aminoacids diastereoselective synthesis via ring contraction of α -chlorolactams, 5339
- conversion of β -benzyloxyamino-carboxylates to β -lactams, 4707
- conversion of D glyceraldehyde acetonide into optically active β -lactams, 3009
- coupling with alkynyl boranes, synthesis of alkynyl azacycloalkanes, 1719
- eight-membered oxo- β -lactams, stereoselective synthesis, 221
- phenoxyacetamido iso-azapenem and iso-azacephem carboxylic acids, synthesis, 1649
- preparation of a *N*-nitrenolactam and its azo analog and thermal decomposition, 4635
- reaction of 4,4 dichloro β -lactam with phenylhydrazine, 1035
- rearrangement and ring expansion, β -lactam ring of 6-sulphenyliminopenicillanic acid, 3419
- ring expansion of β -lactam, 601
- synthesis of α -halo- and α -deutero- β -lactams, 2323
- synthesis of (\pm)-verbasenine, use of β -lactam for prep of 17-membered ring, 3669
- synthesis of 8- and 9-membered keto-lactams, 4253
- Lactones**
- acetal as convenient protecting group, 5035
- addition of 1-methoxy-1-buten-3-yne, 4551
- amidoalkylation of dienes, synthesis of α -acylamino- γ -alkenyl- γ -butyrolactones, 955
- anastrephin and epianastrephin, sex pheromone components, 2611
- biogenesis of *trans*-(18-H:5 α -H)guaianolides, 969
- by rearrangement of α -alkoxy hydroperoxides, 2363
- carbolactone derivs, prep, 189
- citreothiolactone, isolation and structure, 1053
- conjugated phenylseleno-lactonisation coupled with selenoxide rearrangement for functionalising dienylacetic acids, 5827
- Corey's, perhydropentalenone equiv from, 3527
- dehydrogenation of unsymmetrically substituted 1,4- and 1,5-diols to β -subst γ -lactones and γ -subst δ -lactones, 2677
- diastereoselective synthesis of 4(*RS*),6(*SR*)-mercaptomethyl-mevalonolactone, intermediate in new class of HMG-CoA reductase inhibitors, 3769
- diastereoselective synthesis of di- and trisubstituted 4 butanolides, 1687
- dimer of 1,2-dehydroisophtosantonin lactone, crystal structure, 4417
- disubstituted endo tricyclic, prep, alkylation and transformation into 3,5,5-trialkyl-2(5H)-furanones, 1929
- diversified bis-functionalisation of γ -lactols, Ti-mediated, 3555
- enantiomeric forms of 5-hexadecanolide synthesis, 2023
- enantiometric purity and configuration of chiral β -propiolactones by NMR, 1027
- facile route to 3,4-disubstituted α -methylene- γ -lactones, 695
- gibberellin A₁, synthesis of a 19 + 10 thiolactone analog, 351
- guaianolides and pseudo-guaianolides, potential entry, 3705
- intermediate for synthesis of guaianolides, correction, 1959
- isoxazoline route to α -methylene lactones, 2623
- macrolactonisation of 20-hydroxy-arachidonic acid, 37
- one-pot synthesis of γ -butyrolactones, 1715
- oxidation of cyclopropanone cyanohydrins to β -peroxypropiolactones, 4699
- precursor of side chain, approach to (+)-anamarin synthesis, 587
- preparation of (*R*)- γ -hexanolide, (5*R*,6*S*,7*S*)-6,7-isopropylidendioxy- δ -octanolide and (+)-exobrevicomin, from carbohydrate-like chiral synthons, 3753
- preparation of 3,4-dihydroxy- γ -lactones with predictable stereochemistry, 3951
- sesquiterpene lactone, guaianolide, 1641
- substituted Δ^2 -butenolides prep from furan equivalents, 5835
- synthesis of α -methylene- γ -butyrolactones, 4687
- synthesis of (\pm)-boschnialactone, (\pm)-teucrium-lactone and (\pm)-loganin, 5797
- synthesis of (-)-litsenolides C₁ and C₂, use of D-ribonolactone, 5027
- synthesis of milbemycins from avermectins, 5333
- synthesis via intramolecular alkylation of β -keto ester dianions, 253
- synthesis, α -methylene γ - and δ -lactones from conjugated enals by oxidation of 2-substituted allylsilanes, 777
- trans-hydroxylactones from bicyclic olefinic acids, 431
- transformation of 3-O-mycarosyl-erythronolide B into 3-O-mycarosyl-(8*S*)-fluoroerythronolide B, 5527
- trichlorinated γ -butyrolactones, regio- and stereo-selective synthesis, 2395
- unsaturated δ -lactones, by addition of acyl cyanides to ethylenic acyl cyanide enolates, 2847
- volume profile for thermolysis of a β -lactone, 2897
- Lead and compounds**
- substituted dimesitylborylmethanes, 637
- tin lead exchange, synthesis of aryllead(IV)triacetates, 1301
- Leukotrienes**
- aza analog of LTA₄, synthesis, 331
- leukotriene B₄, synthon, synthesis, 409
- new routes to leukotrienes and arachidonate derived epoxy eicosatetraenoic acids, 4917
- non-carbohydrate synthesis of LTB₄, 5285
- pathway, irreversible inhibition by 4,5-dehydroarachidonic acid, 265
- preparation of (\pm)-5-HETE, 5185
- stereospecific synthesis, 5*S*-HETE 5*R*-HETE and their transformation into 5(\pm)-HPETE, 999
- stereospecific synthesis of 14*S*, 15*S*-oxido-5*Z*,8*Z*,10*E*,12*E*-eicosatetraenoic acid, 4899
- synthesis of 11,12,14,15-tetrahydro-leukotriene C₄, D₄ and E₄, 2135
- synthesis of 8,9-leukotriene C₃ and D₃, 4469
- tetrahydro-7*E*,9*Z*-leukotriene A methyl ester, synthesis and reaction with glutathione, cysteinylglycine and cysteine, 2135
- total synthesis of leukotriene B₅, 4883
- Lignans**
- aniba and magnolia neolignans, synthesis, 5011
- aryltetralin, biomimetic synthesis, 621
- herperton, new trimer of coniferyl alcohol, isolation and structure, 5881
- manassantins A/B and saucerneol, isolation, 4947
- natural dibenzylbutanolide lignan with meta-phenol, prestegane A, 3237
- new bisbenzocyclooctadiene, neoisostegane from Steganotaenia araliacea, 2983, 2987
- new cytotoxic neolignan, d₁-megaphone, total synthesis, 1125
- new from antileukemic fraction of Steganotaenia araliacea, 197
- preparation of d₁-megaphone intermediates, 4769
- prestegane A structure, synthesis and comparison with (\pm)-artigenin, 3237
- synthesis, 2,6-diaryl-3,7-dioxabicyclo[3.3.0]octane lignans, 523

- unsymmetrical, synthesis, 523
- Lipids**
- anaerobic rearrangement of 15-(S)-HPETE by lipoxygenase to 13-(R)-hydroxy-15-(S)-trans-11,14,15-epoxy-5,8,11-(Z)-eicosatetraenoic acid, 4921
- arachidonic acid metabolites, synthesis, using microsomal cytochrome P-450, 33
- arachidonic acid, introduction of hydroperoxy group to yield 5-HPETE, 999
- cyanolipids, types II and III, synthesis, 4447
- cyclopentenyl fatty acids from Japanese mosses, isolation of dicranone A and B, 3337
- fatty acids, inhibition of rice blast fungus growth, 4715
- formation, 5,6-epoxy-8,11,14,Z-eicosatrienoic and 5-oxo-8,11,14,Z-eicosatrienoic acids, byproducts in synthesis of 5-hydroxy-6-E-8,11,14-Z-eicosatetraenoic acids, 1755
- Higginsia** tethyoides, presence of (2R,21Z)-2-methoxy-21-octacosenoic acid, 1111
- inhibition of leukotriene pathway by 4,5-dehydro-arachidonic acid, 265
- macrolactonisation of 20-hydroxy-arachidonic acid, 37
- model compds for glycolipids of archaeobacteria, synthesis, 1229
- phospholipids of **Higginsia** tethyoides, presence of (2R,21Z)-2-methoxy-21-octacosenoic acid, 1111
- preparation of (\pm)5-HETE, 5185
- stereospecific synthesis, trans-5,6S-7,9-trans-11,14-cis-eicosatetraenoic acid, 331
- stereospecific synthesis of 14S, 15S-oxido-5Z,8Z,10E,12E-eicosatetraenoic acid, 4899
- structure of **E. coli** lipid A component, 4017
- synthesis of 14(R), 15(S)- and 14(S),15(S)-dihydroxy-5,8-Z-10,12-E-eicosatetraenoic acid, 5719
- synthesis of 14,15-EPETE, 4917
- synthesis of 7,7- and 10,10-dimethyleicosa-5(Z),8(Z),11(Z)-trienoic acids, inhibitor of 5-lipoxygenase, 2457
- synthesis of 7,7-dimethyleicosa-5Z,8Z-dienoic acid and inhibition of 5-lipoxygenase, 5139
- synthetic approach to lipid A, 2011
- total synthesis of 12(S)-10-hydroxy-trans-11,12-epoxyeicosa-5,9,14-(Z)-trienoic acids, 4913
- transformation of 15-HETE to 14,15-dehydroeicosa-trienoic acid and 11,14,15- and 13,14,15-trihydroxyeicosa-trienoic acids, 5715
- Lithium and compounds**
- acylation of lithium Z- β -lithioacrylates, 3959
- aldehydes, reactions with vinyl lithium derivs of enol ethers of diones and conversion to tetramic acids, 4751
- alkoxy and aryloxymethyl-lithium reagents, synthesis, 3163
- alkylation- α -metalation of 4-substituted 1-(t-butoxycarbonyl)-1,4-dihydropyridines, 2807
- amination of organolithiums with MeLi-complexes of N-substituted methoxyamines, 561
- asymmetric alkylation of esters via lithium enolates, 3213
- cage organolithiums, condensation with a ketone, orange colour due to complex, 4213
- direct preparation of t-butoxy-methyl lithium from t-butyl methyl ether, 3165
- lithiation of 1,3-ditelluroles, 237
- lithiothiacyclohexenes intermediates in formation of cis-disubstituted cyclopropanes, 2387
- metalation of benzyl alcohols with two equivs of n-BuLi, 1233
- methylene-cyclopropyllithium, reaction with electrophiles, 1467
- organo reagents, functionalised, addition to p-benzoquinones and cyclohexadienones, 131
- ortho lithiation, N,N,N',N'-tetramethylphenylphosphonic diamide, 2039
- ortho lithiation, N,N-dialkyl-nicotinamides, 2649
- preparation, 1,4-dilithio-tetrahaloarenes, 5721
- reaction, cyclooctatetraene-dilithium with R₂P-Cl to 1,3,5-cyclooctatriene-7,8-diphosphanes and ring opening to 1,8-bis-(phosphino)-1,3,5,7-octatetraene, 1955
- reduction, alkyl halides by LiAlH₄, AlH₃, one electron transfer agent, 2825
- tetrabromoarenes, attempts to polyolithiate, 5725
- Macrocycles** see also **Ethers**
- approach to carbocyclic cytochalasans, 5535
- arcyriaflavin B, synthesis, 1441
- containing both oxo- and thia-bridges, synthesis, 3243
- coprobliverdin III, new model chromophore, 3975
- crown carboxylic acids, formation, 2923
- cyclisation of olefinic oxime mesylates, synthesis of dl-muscione, 943
- cyclohexypyridines, highly structured complexing agents, synthesis, 2707
- flavin analog bearing a crown ring as recognition site, prep, 1539
- hexakis(phenyloxy)benzenes, synthesis and X-ray analysis, 3269
- macrolide with 16-membered lactone ring, 5193
- maytansinoids, synthesis of cyclic carbinolamide moiety, 3065
- metallo-catenanes, synthesis, 5095
- new functionalised crown ethers, reaction of 3,6-dioxo-4(benzyl-oxymethyl)-1,8-octanediol with ditosylates, 1327
- new trichothecene, roridin L-2 structure, 249
- palytoxin, synthesis of C.23-C.37 segment, 1463
- polene macrolide pimaricin, synthesis of two chiral fragments, C 1-11 and C 12-25, 3059
- polyoxa [X.X] and [X](9,10-anthracenophanes, synthesis, 5215
- pyoverdine Pa, structure, 4877
- stability of bis-pyrimidal D,h structure for fulvalene dication, 1139
- synthesis from phenanthroline, 5091
- synthesis of 2- ω -dioxabicyclo-[n.2.0]ring system, 3849
- synthesis of milbemycins from avermectins, 5333
- synthesis of [1.1.1]paracyclophane, 5277
- tetramethanonaphthacenes, short H-H non-bonded distances and orbital interactions through eight δ bonds or through methylene groups, 5415
- tetramine, carrier of amino acid and related anions, 1519
- undecacyclic C₂₄H₂₆-polyquinane, synthesis, 5857
- verbaskine, novel alkaloid, 4381
- virginiamycin M₂, construction of 1,3-oxazole moiety, 2287
- virginiamycin M₂, functionalisation of 2-Me group of 4-t-butoxycarbonyl-2-methyl-1,3-oxazole, 2291
- Magnesium and compounds**
- hydromagnesiation of 3-furyltrimethylsilane, 1809
- hydromagnesiation, vinylsilanes from alkynylsilanes, 1041
- ion, catalytic activity, effect of water on reduction rate with NAD(P)H-model, 1263
- Manganese and compounds**
- organomanganese complex, direct carbomethoxymethylation, 2465
- Mass spectra**
- characterisation of coprobliverdin III, 3975
- germination self-inhibitor, gloeosporone, 5059
- halosulphuranes, 4337
- linear polyketol toxins, 3803
- Mike of CID/MIKE spectrum, use to characterise polar compds, 2263
- positive and negative fast atom bombardment, structure of 4-vinyl-4-desethyl chlorophyll B, 5775
- pyoverdine, 4877
- pyrolysis mass spectrometry for analysis of oligonucleotides, 1691
- structure of cyclic tetrapeptide tetotoxin, 2163
- Mechanistic studies**
- acetolysis and formolysis of (R)- and (S)-1-deuterio-2-cyclopropylethyl p-toluene sulphonates, 4959
- amino Claisen of N(β -ketovinyl)-isouquinolidenes, 1021
- aspects of photocycloaddition chemistry, isobutylene to 5-substituted uracils, 4055
- autoxidative ring contraction of 1,2-bis(trimethylsilyloxy)cyclobutenes, 2635
- CoTPP catalysed reaction of cycloheptatriene 1,4-endo-peroxide, 4135
- evidence for single electron transfer in reaction of lithium enolate of pinacolone with ethyl p-nitrobenzoate, 1667
- formation, products from deazetation of 6,6,7,7-tetrafluoro-2,3-diazabicyclo-[3.2.0]hept-2-ene, 4047

Tetrahedron Letters

- generation, ketones from α -chloroamides, 5687
 indole ring Co(salen)-catalysed oxygenolysis, 213
 indoles from o -azidophenylalkenes, 5169
 inhibition of fatty acid synthetase by cerulenin, 2673
 inter versus intra, reduction of ketones by NaBH₄ in absence of protic solvents, 1015
 interaction of 5-methylhepta-1,3,6-triene with benzenethiol and oxygen, 97
 irradiation of *cis*-8-X-mercuri-2,3,5,6-dibenzo-bicyclo[2.2.2]-octa-2,5-diene-7-ol acetate and *trans*-diastereoisomer, 5839
 isonitrile-nitrile rearrangement, free radical chain mechanism, 4671
 lithium aluminium hydride reduction of organomercuric halides, 1411
 nucleophilic substitution of 3-halogeno- λ^3 -phosphorins, with alkali metal amides, 5055
 one electron transfer in reduction of arenediazonium salts, 3331
 oxidation of substituted N,N-dimethylanilines, thioanisole and methyl phenyl sulphoxides by 5-ethyl-4 α -hydroperoxy-3-methyl-lumiflavin, 1265
 photooxidation of 1-methylindolyl-3-acetic acid, 3749
 pyrolysis of 1,3-butadiene, 869
 racemisation of α -amino acids in presence of aldehydes, 4457
 racemisation of α -hydroxy ketone moiety (C β -position) of optically active anthracyclines, 2589
 radical production by reaction of N,N-dimethylaniline and benzoyl peroxide, 1459
 reaction, bifunctional cyclopropenes with 1,2,4,5-tetrazines, 1485
 reaction, polyhaloarenes as diaryne equivalents, dilithiation mechanism, 5721
 reaction, trialkylboranes with α -azidostyrene, 3779
 reactions, ArSeCl and ArSeCl with alkenes, S-Cl bond making and C-S bond making, 5299
 reversed substituent effects in 5-endo-trig and 6-endo-trig reactions, 2851
 stannylation of 1-bromo- and 1-chloro-4-iodo-4-iodo[2.2.2]-octane, abnormal leaving group mobility (B>I>Cl), 5901
 terpenylation of olivetol by *trans*-2- and 3-carene epoxides, formation of tetrahydrocannabinols, 3129
 tertiary amine nitrosation, 4271
- group, 2829
 reductive demercuration and symmetrisation of organomercury halides, 973
 substituted acrylanilides, cyclisation, 15
 substituted dimesitylborylmethanes, 637
 ureidomercuration, intramolecular, prep of tetrahydropyridones, 11
- Mesoionic compounds**
 fused heterocyclic derivs of 1,3,4-triazole(3,2-*a*)pyridine derivs, synthesis, 3523
 proline derived novel mesoionic synthon, 1067
- Metabolites**
 aeriothionin and homoaeriothionin of *Aplysina* sp and *Verongia thiona*, synthesis, 3351
 aspersin structure, 2527
 genotoxic metabolite streptindole, structure, 4719
 hexahydronaphthalene portion of compactin, synthesis, 1373
 marticins from polyketide and tricarboxylic acid pathways, 4059
 new cytotoxic triterpene from *Hebeloma crustuliniforme*, 1635
 of arachidonic acid in mammalian blood platelets, identification of isomeric hydroxy-11,12-epoxides, 4913
 of arachidonic acid, synthesis using microsomal cytochrome P-450, 33
 phytotoxic, solanopyrones, A,B and C, structure, 5373
 poitidene from marine red algae, 4649
 synthesis, (\pm)-quadrone, 2949
 total synthesis, (+)-monacolin K, 1811
- Metacyclophanes** see **Phanes**
- Metallation**
 of tetramic acids directed, 4751
 reactivity of 1-*t*-butylthio-3-methoxy-1-alkenes towards metallating agents, 4825, 4829
- Micelles**
 cationic, incorporation of pyridoxl model for transamination of amino acids, 2403
 effect on photodimerisation of acenaphthylene and 1-derivs, 4091
 enhanced oxidation of amines by coenzyme PQQ, 3465
 reversed, sequential self-association model, application to aminolysis in alkylidiamine bis(dodecanoate)benzene systems, 2917
 stereoselective cleavage of diastereomeric dipeptide and tripeptide esters, 2615
- Migration reactions**
 acyl migration from saturated C into substituent phenyl group, irradiation of 3-aza-1,2,2,4,4-pentaphenylbut-3-en-1-one, 1089
 bond migration during O-acylation of tetramic acids, 4755
 evidence from labelled acyl-carbenium ion of an oxo transfer reaction, 4911
 H-migration from halocarbenes to (Z)-haloalkenes, 565
- inductive effect on 1,2-H migration in chlorocarbene, 5713
 photo acyl migration in enol ester yielding 3-oxazoline deriv, 1197
 photocyclisation of N-benzoylformyl-N-(phenylthiocarbonyl)-amines involving 1,4-phenylthio migration, 1169
 silyoxybenzamide to silylated salicylamide by O+C Si-migration, 4515
- Molecular orbital calculations**
 anomeric effect in stabilisation of 8-disubstituted radicals, 3613
 application to stereostructure of euphohioscopins A and B, 2577
 borepin and valence isomers, 1863
 bridgehead, strain energies, MM2 calculations, 4169
 conformation of 9,10-dihydro-anthracene, 2893
 dibenzylidene-ethylene dianion, 3985
 lower singlet excitations of [2.2]paracyclophane quinhydrone, 2159
 molecular mechanics, calculations on pentaprismane and hexaprismane, 3697
 prediction, α,α',α' -tetraalkylethylenechloronium and trimethylenechloronium ions, stability, 557
 reexamination of carbanions adjacent to sulphoxide, sulphone and sulphonium centres, 4071
 structure and conformation of [5]metacyclophanes, 1821
Syn- and *anti*-sesquiorbornene, molecular and electronic features, 5289
 thiobenzophenone S-methylide, reaction with pairs of dipolarophiles, selectivity for nucleophilic 1,3-dipole, 4185
 through bond and through space interaction in 1,5-dimethyl-3,7-dimethylene tetracyclo [3.3.0.0^{2,8}.0^{4,6}]octane, 5063
 triplet ground state of di-*t*-butylcarbene, 485
- Molybdenum compounds**
 complexes, catalysts in intermolecular Diels-Alder reactions, 3037
 synthesis of optically active organometallic compds, 3087
- Mutagens**
 from human feces, synthesis of racemic fecapentaene-12 and regioisomer, 5457
 mutagen in *Salmonella typhimurium*, prep of [E]-azoxybis(methylene) bis(3-chlorobenzoate), 2819
- Named reactions**
 Baeyer Villiger oxidation of 5 α -cholestan-6-one derivs, 917
 boron Wittig reaction, 635
 Cannizzaro, evidence supporting single electron transfer pathway, 851
 Claisen condensation, evidence for single electron transfer, 1667
 Cross-Thorpe, synthesis of 3-amino-2-alkenenitriles, 3509
 Diels-Alder reactions, 2-carbomethoxy-4,4-dimethylcyclopentenone, 1353
 Diels-Alder, intramolecular
- Mercury and compounds**
 functionalised mixed acetals of olefinic and acetylenic alcohols via oxymercuration demercuration, 4923
 intramolecular electron transfer from photoexcited benzene rings to C-Hg bonds, 5839
 organomercurials in synthesis of π -allyl palladium, 3457
 organomercuric halides, reduction with LAH, mechanism, 1411
 phenyl(tribromomethyl)mercury, treatment of aldehydes and ketones, deoxygenation of CO

- reactions, 2711
 Diels-Alder, selectivity in aqueous solutions and suspensions, 1901
 Diels-Alder intermolecular, transition metal complexes as catalysts, 3037
 Diels-Alder, aqueous Micellar catalysis, intermolecular reaction, quassinoids, 1897
 exovesicular and endovesicular hydrolysis, differentiation, effect of cholesterol, 3961
 Friedel Craft acylation of dihydropyridine intermediate, synthesis of 3-acylpyridine, 3683
 hetero Diels-Alder, synthesis of uracanine deriv, 4661
 Horner-Emmons, reaction of carbonyl compds with α -silylalkyl-phosphonates, 739
 Horner-Wittig, *cis*-olefins from, 3931
 Horner-Wittig solution to ketene O, α -acetals synthesis, 1303
 Horner-Wittig, synthesis of N-allyl amides, 295
 Hunsdiecker, practical alternative, 4979
 Ivanov, entropic evidence, formation of carbonyl compd-dependent intermediate complexes, 589
 Knoevenagel condensation, synthesis of prostacyclin analogs, 315
 Marschalk, synthesis of 11-deoxy-doxorubicin, 4809
 Nef, *m*-iodobenzoic acid plus excess N,N,N',N'-tetramethyl-N',N-t-butyl guanidine agent, 5227
 non Wittig type reaction of Tebbe reagent with acyl chlorides, 2169
 Paterno-Buchi, intra- and intermolecular reaction on phthalimides, 143
 Polonovski, modified, applications, 1951
 Reformatsky Zn-compds, reaction with allylic halides in presence Cu-salts, 2749
 sila-Pummerer rearrangements at Sp²-hybridised carbon, 4387
 Sommelet-Hauser rearrangement, new applications, 2071
 Toco, of 5-methylhepta-1,3,6 triene, 97
 Vilsmeier-Haack, of N-alkyl-1,2,3,4-tetrahydrocarbazoles and application to synthesis of indole alkaloids, 2189
 Wittig, oxido phosphonium ylides with aldehydes, stereochemistry, 2477
 Wittig-Horner, synthesis of \underline{Z} - α -bisabolene, 111
- Naphthalenes** see Polycyclic aromatic compounds
- Natural products**
 Aaptos sp branched chain mono glycerol ethers, 5699
 Agelas sp, agelasidine A sesquiterpene, 4105
 Aizoaceae alkaloids, 551
Alangium lamarkii, protoberberine alkaloid, Bharatamine, 291
 Allomyces, total synthesis of dl-sirenin, 1517
 Aloe pluridens, pluridone insecticide, isolation, structure and synthesis, 5563
Alteromonas rubra, cyclo-
- prodigiosin, revised structure, 2701
Anastrepha orcadensis, new fusicoccane diterpenoid, crystal structure, 3787
Anastrepha male pheromone, novel lactone components, 2611
Aniba burchellii and *A. simulaus*, novel neolignans, 5011
 ant defense secretion, 4543
Aplusia dactylomea, brominated sesquiterpene, 847
Aplysia dactylomelia, trioxygenated diterpene, 1075
Aplysina sp and *Verongia thiona* novel metabolites, 3351
Aristolochia indica, new naphthoquinone, 1333
Arnebia euchroma, arnebinone structure, 3247
Arnebia euchroma inhibitors of prostaglandin biosynthesis, 2407
Aspergillus parasiticus, aspersitin structure and synthesis, 2527, 2531
Aternaria solani, solanapyrones A,B and C structure, 5373
Aternaria sp, antifungal hydroxy-hydroperylene-diones, 5653
 Athabasca bitumen, bicyclic and tetracyclic terpenoid sulphoxides and sulphides, 651
Beneckea gazogenes, cyclic prodigiosin from, 2797
Berberis empetrifolia, alkaloid, 155
Blakeslea trispora, prohormone methyl 4-dihydrotrisporate, synthesis, 5105
Boarmia selenaria, identification of pheromone, 505
Botryococcus braunii two species distinguished on structure of hydrocarbons, 4013
Botryococcus braunii, structure of hydrocarbons, 4013
Briareum polyanthes, new polyfunctional diterpene, 691
 celerin, structure revision, 5897
 cembreoniod (\pm)-asperdiol synthesis, 2267
Centaurea clementei, new lactone sesquiterpene, guaianolide, 1641
Centaurea cyanis blue pigments, structure, 5749
Cerydalis clavicularia, new class of Papaveraceae alkaloids, 2029
Chamaecyparis obtusa seed, new terpene quinone methides, 1535
 chiral synthons for polyketide-derived natural products, stereocontrolled synthesis, 1987
 chlorophyll b, ¹³C NMR, 173
Clavularia viridis, new prostanoids, 4433
Clavularia viridis, stereochemistry of new prostanoids, 1549
Clitocybe acromelaga, acromelic acids A and B, structures, 939
Colletotrichum gloeosporoides germination self inhibitor, 5059
Commelina communis real anthocyanin, 4863
Comptonotus pennsylvanicus, E-6-(1-pentenyl)-2H-pyran-2-one, 5439
Corydalis clavicularia isolation of ribasidine, 4481
Corydalis clavicularia, new class alkaloids, 2445
Cypridina luceferinol, structure, 5753
Dacus oleae pheromone spiroketal component, 5915
- Dacus oleae* rectal gland secretion, new synthesis of 1,7-dioxaspiro-[5.5] undecones, 3905
Delphinium cardiopetalum, new diterpenoid alkaloids, structure, 3765
Delphinium pentagynum, alkaloid pentagydine structure, 959
 dibenzofuran cannabifuran, synthesis, 101
Dicranium sp, cyclopentenonyl fatty acids, 3337
Dictyopteris synthesis of pheromones, 2665
Dictyota dichotoma, new tetracyclic diterpene, 4341
Diospyros species, homologs of Juglone bearing 4-hydroxy-5-methylcoumarin-3-yl units, 1085
Dysidea pagilis furanoid sesquiterpene, new, 3897
E coli, structure of lipid A component, 4017
 enantioselective synthesis of (-)- β -santalene, 4665
Erythrina sigmoidea, antibacterial flavanones from, 4127
Erythrina melanacantha seeds, new alkaloid, 5067
Euphorbia helioscopia, new toxic diterpenes, 2577
 fern constituents, poly-podatetraenes, structures, 5733
 Fumariaceae plants, new oxocarbine alkaloids, 2295
Ganoderma lucidum, new poly-oxygenated lanostane acids, 1081
Geranium macrorrhizum, photolysis and pyrolysis of isogermacrone, 947
Ginkgo biloba, polyprenols, synthesis of mammalian dolichols, 5103
 Greek tobacco terpene with novel skeleton, 843
Gymnocolea inflata, new *cis*-clerodane diterpenoid, 115
Gymnopilus spectabilis bitter principles, 1991
Gymnopilus spectabilis, structure of gymnopillin, 1735
Gymnopilus spectabilis, novel polyisoprenepolyols, 1731
Hebeloma Crustuliniforme, new cytotoxic triterpene, 1635
Herpetospermum candigerum lignoid trimer of coniferyl alcohol, 5881
Higginsia tethyoides, phospholipid studies, 1111
Illicium anisatum, revised structure of pseudoanisatin, 771
 isolation of ergosta-5,7-diene-3 β ,23 ξ -diol from yeast, 4729
Kokoona zeylandica new triterpenes, 2025
Kokoona zeylandica, new phenolic triterpene, structure, 2799
Lactarius sp, isovelleral configuration, 4631
Lactarius species, velutinal esters, conversion to free alcohol, 1415
Laurencia chilensis, isolation and structure of chilenone A, 4063
Laurencia obtusa, new brominated metabolites, 4143
Laurencia poitei, new metabolite, 4649
Ligusticum wallichii new dimeric compd, 4677
Ligusticum wallichii, new diol, 4675
 linear isoprenoids, stereoselective

- route, 5531
Mactra chinensis, novel carotenoid mactraxanthin, 911
Maesa lanceolata, isolation, characterisation and synthesis of maesanin, 3825
Magnolia denudata, novel neolignans, 5011
 marine invertebrates, minor and trace sterols, 665
Martensia fragilis, indole alkaloids, 2087
Melodinus celastroides, new indoline skeleton, isolation, 761
 monoacylated diamines, biologically important, synthesis, 5211
Morus alba bark, structures of albanols A and B, 3013
Murraya enchrestifolia, novel biscarbazole alkaloid, 5377
 mycosporine reduced glutamine and glucoside, isolation and structure, 65
Myoporum montanum, new furano-sesquiterpene ketones, 1749
Myrothecium roridum, new trichothecene structure, 249
Nelia meyeri, 4-aryl flavan-3-ol, 1825
 novel class of insect-activated selective poisons, 2461
Orthosphenia mexicana triterpene quinone methide, X-ray analysis, 3033
Pachydictyon coriaceum, new diterpene, 5117
 palytoxin, stereo controlled synthesis of C.85-C.98 segment, 2243
 palytoxin, synthesis of C.23-C.37 segment, 1463
 pathway from allanthone to shinjulactone, 4843
Patiria pectinifera asterosaponin P, isolation, 3893
Penicillium citreo-viride B citreothiolactone, 1053
Penicillium paraherquei, new meroterpenoid from, 3113
Pfaffia paniculata, nortriterpene pfaffic acid, 1057
Phyllosticta maydis, structure of host specific pathotoxins, 3803
 phytoalexin from carnation, 51
 pine beetle, racemic endo-brevicomyn synthesis, 4163
Pisolithus tinctorius, isolation and structure of pisolactone, 2205
 plant growth promoting dolicholide and 28-norbrassinolide, synthesis, 773
Platycodon grandiflorum, structure of anthocyanin, 2181
Pogostemon cablin, novel tetracyclic sesquiterpene, 937
 polycyclic, prep by intramolecular Diels-Alder reaction of 2-alkenyl-1,2-dihydropyridines, 2711
Prosopis glandulosa phenolic components and new class of condensed tannins, 4627
Pseudomonas aeruginosa siderophore, 4877
Pteridium aquilinum, novel norsesquiterpene glucoside, 4117
Pteridium aquilinum stereo-chemistry of ptaquiloside, 5371
 rearrangement of caryophyllene to isoclovene, 3397
Rhodospseudomonas sphaeroides, novel pigment, 5703
 rice plant, self defense against rice blast disease, 4715
Rocella fuciformis, structure revision, picrorocellin, 1445
Salmonella typhimurium mutagen, [E]-azoxybis(methylene) bis(3-chlorobenzoate), prep, 2819
Sarcocapnos crassifolia, new class of Papaveraceae alkaloids, 2029
Sarcocapnos crassifolia new isocolarine alkaloids, 2303
Sarcocapnos enneaphylla, isolation of ribasidine, 4481
Saurusus cernuus biologically active lignoids, 4947
Schisandra species, new triterpenoids, structures, 2351, 2355
Schizosaccharomyces pombe, cadystin structure, 925
Sclerotinia fructicola, synthesis of (±)-sclerosporin, 1703
Siphonaria diemenensis, anti-biotics, 1917
Siphonaria pectinata new antibiotic from, 3055
Siphonochalina siphonella, new triterpene, 3673
Solenopsis invicta, queen recognition pheromone, prep, 1889, 1893
Steganotaenia araliacea, isolation of prestegane A, 3237
Steganotaenia araliacea, isolation of new lignan, 197
Steganotaenia araliacea new bis-benzocyclooctadiene lignan, 2983, 2987
Streptococcus faecium, genotoxic streptindole structure, 4719
Streptomyces grisens, bafilomycins, 5193
Streptomyces cavendofoliae, fosfazinomycins A and B structures, 2283
Strychnos dinklagei alkaloid 17-oxoellipticine, 3831
 synthesis of 3(2H)-furanone products, 2117
 synthesis of chrysoloidal and loganin, 5807
Tetrosia sp, novel polyacetylene alcohol, 2771
 total synthesis of (±)-ptilocalin, 861
 trichoverritone and 16-hydroxy-roridin L-2 from Myrothecium roridum, new trichothecenes, 3539
Trypodendron lineatum, synthesis of pheromone (±)-lineatin, 3021
Typha latifolia plant growth hormone, structure, 3859
Uvaria ferruginea constituents, 2019
Vellozia candida, new diterpenes with rosane skeleton, 5043
Verbascum pseudonobile macrocyclic alkaloid, 4381
Verongia aerophoba, isolation of bromo compds, 3029
Vespa orientalis pheromone, synthesis of enantiomeric 5-hexadecanolides, 2023
Vitacea polistiformis, sex pheromone, structure, 1007
Zoobotryon verticillatum, gramine derived bromo-alkaloids, 481
- Nickel and compounds**
 Ni for prep of benzyl ketones from coupling of benzyl halides with acyl halides, 2451
 Ni mediated hydrocyanation and carbonylation of alkynes with
- trimethylsilylisocyanide, 2073
 tetracarbonyl Ni induced carboxylation of gem-dibromocyclopropane, 1255
 trisarylphosphite - Ni(O)compds, catalysis, addition of electron-deficient olefins with (diorganyl)methylene)cyclopropanes, 5847
- Nitrenes**
 reaction with 1H-azepine derivs, 2275
- Nitriles**
 acetonitrile, reaction with 1-naphthylcarbene to form nitrile ylid, 3955
 benzoyl cyanides, solvolysis in methanol-acetonitrile and methanol-acetone, 4723
 carbanions derived from α-amino nitriles, alkylation, inversion of configuration and important racemisation, 4683
 coupling of β-acetamido radicals with α-chloro-acetonitrile, 5339, 5343
 cycloaddition of nitrile oxides to arylthiocyanates, 5141
 diaminomaleonitrile, reaction with PCl₃(NR₂)_{3-n}, formation of 1,3,2-diazaphosphole derivs, 2137
 dienophiles, cycloadditions of 2(t-butylthio)acrylonitrile, 885
 from reaction of oxazolines with POCls, 1437
 fulminic acid, *in situ* prep, 1815
 fumaric dinitriles, addition to azlactones of α-amino acid derivs, 189
 hydration of α-aminonitriles to α-aminoamides, 1501
 hydrolysis of α-chloronitriles to ketones, 5687
 isonitrile-nitrile rearrangement in soln, free radical chain mechanism, 4671
 methylenation with titanocene-Zn complex, 2043
 nitrile oxide, intramolecular cycloaddition, prep of hydroazulenone ring system, 3705
 nitrile oxides, fragmentation with Et₃N, 4377
 non-stereospecific, addition of :CBr₂ to styrene, furmaronitrile, 3799
 primary nitriles, conversion to acids, 2223
 reaction, o-aminonitriles with halogenoacetonitriles, formation of fused pyrimidines, 4611
 secondary nitriles, conversion to ketones, 2223
 self condensation of ethylenic acyl cyanides, 2847
 stereoselective route to Z-cinnamonitrile, 3835
 synthesis, 3-amino-2-alkenenitriles by Cross Thorpe reaction, 3509
 synthesis, 2-pyridyl malono-nitriles, 5805
 total synthesis, dl-sirenin, 1517
 trimethylsilyl iodide dehydration of aldoximes to nitriles, 4533
 unexpected β-elimination from 3,3-difluorocyclobutanecarbonitrile, 1639
- Nitrites**
 thionitrile intermediates, coupling of thiols into disulphides, 3103

- trans-tertiary hyponitrite, reaction with alkyl halides, 451
- Nitro compounds**
conjugated nitro olefins, electrochemical prep, 4443
diaryl nitroxides and acyl nitroxides prep, 5547
functionalised nitroalkanes and chloronitroalkanes, substrates for $S_{RN}1$ reactions, 1787
new versatile synthesis of 4-nitroindoles, 3665
nitro-olefins conversion to ketones or aldehydes, 417
nitroalkanes, radical cations from, 1293
nitroalkanes, reaction with α -ketoaldehydes, 3063
nitroarenes, Pt-catalysed reduction with CO and water, 4121
nitroaromatic compds, addition of benzoyl and substituted benzoyl radicals, 669
nitrostyrenes, reduction to 2-aryl-1-nitroalkanes, 227
olefinic bond, altered by introduction of NO_2 group in olefinic C atom, 2795
preparation of α -methylene carbonyl compds from α -nitroketones or α -nitroesters, 3477
radical nucleophilic substitution of α -nitro-thiocyanates, 2517
reactivity of ketoenamines with 1-phenyl-2-nitropropene, 1621
secondary, conversion to ketones, new Nef agent, 5227
synthesis of 2'-O-nitro-9- β -D-arabinofuranosyladenine and 2'-O-nitro-9- β -D-arabinofuranosyl-hypoxanthine, 3183
- Nitrones**
aldonitrones conversion to thioamides, 4927
by transformation of N,N-di-substituted hydroxyklamines with Pd catalyst, 1049
C-cyclopropyl nitrones, synthesis and cycloadditions, 435
cycloaddition of methyl propiolate and C-alkoxy-nitron, 4657
selective oxidation, 1-hydroxy-azetidines to 4-membered cyclic nitrones or 1,4-diacetoxy-2-azetidiones, 825
- Nitrosamines**
nitrosamine formation from tertiary amines, 4271
- Nitroso compounds**
nitrosocarbonylbenzene spin traps only nucleophilic C-radicals, 5547
spin trapping with 2-methyl-2-nitrosopropane of α -azidoalkyl radicals, 3761
- Nuclear magnetic resonance spectra**
anthocyanin pigments, PMR, 4863
arabinoxane structures, 1H and ^{13}C NMR, 3247
aromatic aldehydes and ketones, CO group, S-trans to α -position of highest double bond character, 2367
aryl esters of tris(fluoro-sulphonyl)methane acid form 1H and ^{19}F NMR, 87
biosynthetically enriched methyl ester of masticin with ^{13}C , ^{13}C MR, 4059
characterisation of 2-(1-hydroxyethyl)-2-desvinyl chlorophyllide a, NOE and PMR, 5703
characterisation of coprobiliverdin III, 3975
characterised structures of chlorophyll A and B in soln, PMR, 2681
chlorophyll b, ^{13}C NMR, 173
conformation analysis of aminocyclohexane using ^{15}N NMR, 4519
conformation and crystal lattice effect in oxygenated hexalin, octalin and decalin derivs in soln and solid state, ^{13}C NMR, 4555
conformation of seven dithi[3.3]-azulenophanes, PMR, 2199
Cope activation barriers of dicyano-1,5-dimethylsebullvalenes, 5595
covalency of S-halogen bond in 5-chloro- and 5-bromo-5,11-epoxy-6,11-dihydrodibenzo[b,e]thiepins, 1H NMR, 4337
cyclic tetrapeptide related to chlamydocin, homo- and heteronuclear NMR, 2553
dapiramicin A, 1H and ^{13}C -NMR, 495
dependence of one-bond ^{13}C - ^{13}C coupling constants on bond angles, 1833
deprotonation in phenols and flavonoids, ^{13}C NMR, 177
detection of imino H-bond in G-C pairs by 1H and ^{15}N NMR, 4067
deuterium incorporated into 2-n-hexyl-5-n-propylresorcinol, Eu(fod) $_3$ -shifted 1H NMR as probe chirality, 5261
deuterium NMR study of 4-methyl-estratriene formation, 3405
dibenzylidene-ethylene dianion, ^{13}C NMR, 3985
effect of α - and β -substituents on barrier to rotation in styrenes, DNMR study, 1077
enantiomeric composition of chiral 2-substituted-1,2-glycols via ^{13}C NMR and HPLC, 3551
enantiomeric composition and absolute configuration of 2,3-deuterated 3-alkylpropanols, Eu(fod) $_3$ -enhanced 1H NMR, 5257
enantiomeric purity and configuration of chiral β -propiolactones, NMR in optically active solvents, 1027
formation of 6-amino-3-cyano-2(1H)pyridones from aldehyde derivs, ^{13}C NMR, 5073
fulvalene-like butatrienes, spectroscopic detection and polar structure, 2861
germination self-inhibitor, gloeosporone ^{13}C and 1H NMR, 5059
gramicidin S and derivs, NMR, 3737
Gymnopilus spectabilis bitter principles, planar structure, ^{13}C and 1H NMR, 1991
helically enantiomeric form of benzo[9]annulene in soln, chiral NMR shift reagent, 4279
identification, (R) or (S) enantiomers of 2-(2H_3)-methyl-2-methylbutanol, 2H NMR, 831
lanthanide(III) salts of (S)-carboxymethylxyloxy succinic acid for separation of enantiomeric mixtures of amino acids and (oxy)carboxylic acids in aqueous soln, 3141
linear polyketol toxins, NMR, 3803
metallo-catenanes, NMR, 5095
method to distinguish between two prochiral hydrogens at C-1 of spermidine, 151
miharamycin A and B, structures, ^{13}C and 1H NMR, 1805
natural 4-aryl flavan-3-ol, 1H NMR, 1825
new bisbenzocyclooctadiene lignan, 1H and ^{13}C NMR, 2983, 2987
one bond ^{13}C - ^{13}C coupling constants dependent on C-C bond angle for hydrocarbons with central CH_2 , 7
only one Sp^3 carbon in 5,5-dichlorocyclopentadiene, NMR, 4891
pentatrideca-, pentapentadeca-, pentaheptadeca-, and penta-nona-deca- fulvalene derivs, 1H NMR, 5273
pholipomycin, 1H and ^{13}C NMR, 499
polypodatetraenes, structures, 1H and ^{13}C NMR, 5733
rosane diterpenes, ^{12}C and 1H NMR, 5043
sclerosporal, 1H NMR, 1703
solution conformation of 6 α and 6 β epimers of oxymorphanine, 1H NMR, 4801
species [(C $_8$ H $_7$) $_2$ PO]M, prep and structure by ^{31}P NMR, 1791
spectral properties of tetra bis(1-methylcyclopropyl)ethylene, 5861
stable cyclopent[e]azulenide anion, 1H and ^{13}C NMR, 4585
stable unsymmetrical diphosphenes, ^{31}P NMR, 2031
structure and conformation of [5]metacyclophanes, 1H NMR, 1821
structure and conformation of perhydro furo(2,3-6) furan derivs, 'cosy' 2D NMR, 4307
study of organo-Li, -Na and -K compds in tetrahydrofuran- O_8 , NMR, 5477
study of P-N bond in phosphoramidates by ^{15}N and ^{31}P NMR, 4989
substituted 1,8-diazanthraquinone structures of diazaquinomycin A and B, NMR, 3643
two dimensional homonuclear chemical shift correlation, flavin adenine dinucleotide, 473
two quasi isomorphous antibiotic ionophores, M139603 and tetronamycin, soln structure and cation-binding, 3319
Vespa crabro identification of semiterpenoid esters, 5811
- Nucleic acids**
chloroform soluble model for G-C pair giving 1H shifts as seen in RNAs, 4067
DNA scission by porphyrin(Fe) intercalators, 1523
polymer supported DNA synthesis using hydroxybenzotriazole activated phosphotriester intermediates, 3989
- Nucleosides**
antibiotic oxanosine, synthesis, 931
dealkylation of nucleoside aryl-methyl-2-chlorophenyl phosphates, 951
fluorination of 6-O-cyclouracil nucleosides, 1055
four deoxyribonucleoside-3'-aryl- β -cyanoethyl phosphates, synthesis, 2753
homolytic methylation, acetylation and carbamylation of N(6)-benzoyl-2',3',5'-tri-O-acetyl-

- adenosine, 799
 mihamycin A and B, structures, 1805
 modified nucleosides from 'wobble position' of t RNAs, synthesis of 5-carboxymethylaminomethyluridine and 5-carboxymethylaminomethyl-2-thiouridine, 5395
 new protecting group, N⁶-(methyl-2-pyrrolidine amidine)deoxyadenosine, 2953
 nucleoside Q, synthesis, 3647
 oligodeoxynucleoside methyl phosphonates, synthesis on glass polymer using phosphite approach, 877
 phosphorylation of N-protected-5'-O-(4,4'-dimethoxytrityl)-2'-deoxynucleosides, preparation of DNA fragments, one decamer one heptadecamer, 3989
 phosphorylation of N-unprotected nucleosides via aluminium alkoxides, 5641
 phosphorylation via OH activation, 1165
 preparation of deoxynucleoside phosphoramidites, 1963
 pyrrolopyrimidine nucleosides, 4793
 ribonucleosides, conversion to protected 3'-deoxynucleosides, 865
 synthesis, 2'- or 3'-ketonucleosides and reduction to inverted nucleoside epimers, 1589
 synthesis, 2'-O-nitro-9-β-D-arabinofuranosyladenine and 2'-O-nitro-9-β-D-arabinofuranosylhypoxanthine, 3183
 thymidine derivs bearing (PhS)₂P(O) and (PhS)(PHNH)P(O) groups, synthesis and properties, 5741
 uracine deriv from blasticidin S, 4661
- Nucleotides**
 acid labile glycosidic bond in 2'-deoxyadenosine series, projection in N-1 oxidation, 53
 cytidine and adenosine, amino protection, use of p-nitrophenylethoxycarbonyl group, 3583
 deoxyoligonucleotide synthesis, 5-(p-nitrophenyl)tetrazole superior activator of N-morpholino-phosphoramidite, 3171
 deoxyoligonucleotides synthesis, 245
 flavin adenine dinucleotide reassignments in ¹H NMR, 473
 guanine residue, diphenylcarbonyl and propionyl protecting groups, 2775
 methoxyethoxymethyl group protection of uracil residue in oligonucleotide synthesis, 5363
 of defined sequence, preparation by improved syringe technique, 4963
 oligodeoxynucleotide d(CGGTACCG) synthesis, 5843
 oligodeoxynucleotide synthesis in soln, purification orientated, 751
 oligodeoxynucleotides, synthesis on controlled pore glass using phosphotriesters and flow system, 5771
 oligodeoxyribonucleotide synthesis, phosphotriester approach, 2-chloro-4-tritylphenyl protecting group, 2753
 oligodeoxyribonucleotides, solid phase synthesis using phosphotriester in 5'-3' direction, mass spectral analysis, 1691
 oligodeoxyribonucleotides, 2'(3')-O-benzoyluridine 5'-succinyl linked to glass support for solid phase synthesis, 5317
 polynucleotides, solid phase synthesis using phosphite chemistry, 1019
 synthesis on porous glass using triester approach, 747
 synthesis, 2-deoxyguanosine derivs and O⁶-p-nitrophenylethyl guanosine, building blocks for oligonucleotide synthesis, 711
 synthesis, mmm³s²UpUpU, mmm³s²UpU, mcm³s²UpUpU and mcm³s²UpU, 5391
 synthesis, O⁶-protection in thymidine and uridine derivs by p-nitrophenylethyl group in Ag-ion catalysed alkylation, 3587
 synthesis, protected derivs of 5-methylaminomethyl-2-thiouridine and 5-carbomethoxymethyl-2-thiouridine as components, 5387
 synthesis, temporary protecting group for 3'-terminal phosphodiester, functions, 951
- Osmium compounds**
 reaction of 2,5-diaryl-1,3,4-oxadiazin-6-one with trans-cyclooctene, cis, trans-cyclooctadiene and cyclopropenes, 353
 stereochemistry of osmylation products of allylic alcohols and derivs, 3943, 3947
 stereoselective osmium tetroxide-catalysed hydroxylation of γ-hydroxy α,β-unsaturated esters, 3951
- Oxadiazoles**
 aniline, N-methyl- and N,N-dimethyl, reaction with 4,6-dinitrobenzofurazan 1-oxide, 1555
 formation of 1,2,4-oxadiazoles during fragmentation of nitrile oxides with Et₃N, 4377
 imidazole 4,6-dinitrobenzofuroxan system, 493
 new route to 5-arylthio-1,2,4-oxadiazoles, 5141
 pyrimidine N-oxides, ring transformation to 1,2,4-oxadiazoles, 5763
 pyrrole, indole and N-Me derivs, and furan, addition of 4,6-dinitrobenzofuroxan, 2255
- Oxazines**
 erythro-selectivity in [2,3]-Wittig rearrangement via Meyers' azaenolates of 5,6-dihydro-1,3-oxazine system, 513
 new synthesis of N-substituted tetrahydro-2H-1,3-oxazine-2-ones, 3979
 rearrangement, hexahydro-4H-1,2-benzoxazine N-oxide to 1(2H)-hexahydroptalenone system, 1621
- Oxazoles**
 dipeptides via unmasking of 5-aryl and 5-acyloxy-aminoxazoles, 5155
 metallation and alkylation at ring Me group of 2-methyl-1,3-oxazole-4-carboxylic acid, 4391
 virginiamycin M₂, construction of 1,3-oxazole moiety, 2287
 virginiamycin M₂, functionalisation of 2-Me group of 4-t-butoxy-carbonyl-2-methyl-1,3-oxazole, 2291
- Oxazolidines**
 formation of 1,2,4-dioxazolidine by electron-transfer photooxygenation of 1-butyl-2,3-diphenylaziridine, 3047
 formation of oxazolidin-4-one derivs from DMF condensation with α-haloamides, an aziridinone or a Δ²-1,2,3-triazolin-5-one, 4473
 methyl copper, reaction with 2(-)R-oxazolidine, 585
 oxazolidin-2-ones, N-substituted, synthesis, 3091
 oxazolidines derived from α,β-ethylenic aldehydes and ephedrine, reaction with organocuprates, 373
- Oxazolines**
 aryl oxazolines, comments on derived benzynes, 4935
 comparison of decomposition of 3-nitreno-1,3-oxazolin-2-one and isomeric 1,3,4-oxadiazin-2-one, 4635
 deprotonation of (S,S)- and (S,R)-oxazolines and alkylation to 4,4-subst oxazolines, 3311
 lithiated phenyloxazoline o-amination, 3795
 mesoionic oxazolones to alkenes, 369
 new synthesis of 2-oxazolin-4-ones, 2811
 preparation of 2-alkyloxazolin-5-ones, 2501
 reaction with POCl₃, 1437
 synthesis of 3-oxazolin deriv by 1,2-acyl migration of enol ester, 1197
- Oxepins**
 new approach to oxepin system, 5355
 preparation of 2,5-dihydrooxepin-2-one deriv, 353
 ring contraction of 2,3,4,5-tetrahydro-1-benzoxepin-3-ol to 2-hydroxymethylchroman derivs, 2495
- Oxetanes**
 acylation of 3-methyl-3-hydroxymethyl oxetane to oxetane esters and rearrangement to bridged carboxylic ortho esters, 5571
 alkylation with lithium acetylides, 5121
 cyclodehydrogenation of o-(3,3-dimethylallyl)phenols, with trityl tetrafluoroborate, 5801
 formation, photoaddition of tetramethylethylene or diethyl keteneacetal to phenyl glyoxylic esters, 3217
 from N-substituted phthalimides and alkenes, 143
 silaalkenes, reaction with cyclopentadienones to give 1,2-silaoxetanes, -1477
- Oxidation**
 acid labile glycosidic bond in 2'-deoxyadenosine series, projection in N-1 oxidation, 53
 alcohols by means of Me₃SiOOSiMe₃, 2185
 aliphatic and alicyclic saturated hydrocarbons, activation of C-H bond, 1979
 alkenes with iron (II) catalysed

- persulphate, 4547
alkyl phenyl tellurides and telluroxides, replacement of Te by OMe, ring contraction and phenyl migration, 4347
by air, of ferrous alcohols and acylolins, effective catalyst, 2399
carbocation intermediate in oxidation of 7-acetyl[4.2.1] and 7-acetyl[4.2.2]propellanes, 3639
comparison of 3-amino-4,5-diphenyl-1,3-oxazolin-2-one and 3,6-dihydro-5,6-diphenyl-1,3,4-oxadiazin-2-one, 4635
flame induced, aliphatic amines to amino acids, 3357
mechanism, of substituted N,N-dimethylanilines, thioanisoles and methyl phenyl sulphoxides by 5-ethyl-4a-hydroperoxy-3-methyl-lumiflavin, 1265
mild and selective oxygen atom transfer, Bu_4NIO_4 with metalloporphyrins, 3631
n-alkanes selective oxidation with lead tetraacetate, 3891
oxidative coupling under PTC conditions, 4131
phenols by O_2 in presence of μ -oxo cupric catalyst, dependent on catalyst/phenol ratio, 5611
phenols, stereoelectronic factors, 1071
photooxidation and dimerisation of alkylbenzenes, 4275
Rh catalysed oxidation of anthracenes to anthraquinones using t-butylhydroperoxide, 5499
secondary OH functions, using $\text{VO}(\text{acac})_2 \cdot \text{t-BUOOH}$, 5009
sodium perborate of anilines and sulphides, 1505
titanium dioxide oxidation, 5963
trimethylphenol, Ru-catalysed oxidation with H_2O_2 , 5249
unsymmetrical benzils, by oxidation of o-hydroxyphenyl benzyl ketones with DMSO/KOH , 3401
with potassium superoxide, β -naphthylamine to dibenzo[a,h]-phenazine, dibenzo[a,i]phenazine and 1-hydroxy-2,2'-azo-naphthalene, 3159
- Oximes**
action of NaBH_4 on oximes of σ -ethynyl-5-oxo-4,5-secosterols, and formation of dioximes of 3,5-dioxo-4,5-secosterols, 5017
aldoximes dehydration to nitriles and Beckmann rearrangement of ketoximes with trimethylsilyl iodide, 4533
carbon suboxide reaction with 2-hydroxyaryloximes, 5013
cleavage to carbonyl compds, 4367
oxime sulphonates, rearrangement to imidoyl iodides, 3255
preparation of 3-alkyl-3-(1-hydroxycyclopentyl)alkan-2-one oximes, 2991
reduction with diisobutylaluminium hydride, 4711
- Oxiranes**
acyclic allylic alcohols, transition state of m-chloro-perbenzoic acid epoxidation, 5421
alkynylation using alkynyl boranes, 391
allylic epoxidation and isomeriation of 15(S)-HETE, 5719
- bicyclic endoperoxides, CoTPP rearrangement to bisepoxides, 311
catalytic epoxidation of olefins with Na OCl/Mn-porphyrins arguments against chlorohydrin route, 3621
cyclic allylic epoxides, 1,4-syn-opening, 441
cyclohexene epoxide, ring opening with trimethylsilyl cyanide, 655
dialkyl telluronium allylide for synthesis of α,β -unsaturated epoxides, 5109
direct epoxidation of polycyclic aromatic compds and olefins by superoxide in presence of phosgene dimer, 3481
epoxidation of 2,3-dimethyl-2-butene by substituted benzyl-azobenzene α -hydroperoxides, 123
epoxidation of allyl and homoallyltrimethylsilyl ethers, 395
epoxidation of allylic alcohols containing conjugated alkyne, prep of chiral allenes, 5587
epoxide adducts with 1-lithio-1-benzene-sulphinyl-2-methylsilyl-ethane, prep of trans-3-(trimethylsilyl) allyl alcohols and trans-4-(trimethylsilyl)-3-alken-1-ols, 2371
epoxide conversion to halohydrins, 1307
epoxides from reaction of 1,2-diols with triphenylphosphine-tetra-chloromethane-potassium carbonate, 661
epoxides, transformation to ketones and acetones, 2857
erythro and threo 13,14-epoxides of 15(S)-HETE, transformation to 14,15-DHET by reduction and mixture of 11,14,15- and 13,14,15-trihydroxyeicosatrienoic acids by hydrolysis, 5715
formation of α,β -epoxy systems from β -peroxy carbon free radicals, 3169
homoconjugated dienes, reactions with epoxide functions, effect on Diels-Alder regioselectivity, 3603
preparation of chiral 1,2-diols using (2S,3R)-1,2-epoxy-3-butanol, 4539
structures of β -senepoxide, tingtan-oxide and diene precursors, 2019
synthesis and configuration of 3,4-diol-1,2-epoxides of benzo [c]phenanthrene, 1349
synthesis of β,γ -epoxycyclohexanones, 107
synthesis of cis-vinyloxiranes, 4009
tetrahydrobenzo ring epoxide derivs of aza-polycyclic aromatic hydrocarbons, reactivity, 27
tetramethylloxirane, prep, 123
trialkylaluminium reagents, reaction with 2,3-epoxyalcohols, synthesis of α -chiral aldehydes, 1377
vicinal O-protected azidohydrins, reaction of epoxides on Me_3SiN_3 , 4189
vinylic epoxides via arsonium ylides, 4419
- Palladium and compounds**
catalysed cross coupling of homo-benzyl-aryl, homobenzyl-alkenyl homoallyl-aryl and homopropargyl-aryl compds, 3823
Pd substituted acrylanilides, cyclisation, 15
synthesis of π -allylpalladium via organopalladium addition to non-conjugated dienes, 3457
- Paracyclophanes** see Phanes
- Penicillins**
approach to trans-carbapenems, 217
chiral synthesis of 2-thioxopenam, synthon for penems, 3179
conversion to secodethiacephalosporins, 1875
derived sulphenimides, thio-sulphonates and disulphides, formation of 4-acyldithioazetid-2-ones, 1627
derived sulphoxides, thermolysis to 4-acyldithioazetid-2-ones, 1623
derivs, ring expansion, 221
intermediates in synthesis of 6-amido-1,1-dimethyl-carbapen-2-ems, 135
preparation of 6 β -acylamino-2-penam-3-carboxylates, 2501
preparation of 6- α -hydroxy-6 β -acylureidobenzylpenicillins, 283
reaction of 6-sulphenimino-penicillanic acid ester with diazomethane, β -lactam ring expansion rearrangement, 3419
rearrangement of penicillin G β -sulphoxide, cleavage of C₃-S bond, 201
route towards 2-oxo-, 2-thio- and 2-iminopenams and conversion to 2-alkoxy-, 2-alkyl thio- and amino-penams, 2563
seco-isopenicillin N, potential intermediate in biosynthesis of penicillin, 2941
synthesis of 2-methoxy- and 2-phenoxy-penems from 4-allyl-sulphinyl azetidiones, 3373
synthesis of carbapenem-3-phosphonic acid derivs, 347
synthesis of substituted 6-[1-(1,2,3-triazol-1-yl)ethyl]-carbapenem derivs, 5543
to penem and carbapenem, 3251
total synthesis of cis-6-methoxyl, 1-dimethylcarbapen-2-em, 139
transformation of penicillin into penem nucleus synthesis of 2-carboxylpenem deriv, 1511
trichloroethyl 6-diazopenicillanate reaction with dithienium perchlorate, ring expanded β -lactam, 601
- Peptides and Polypeptides**
asa containing, synthesis, 1671
cadustin structure, 925
Cd binding peptides induced in fission yeast *Schizosaccharomyces pombe*, 925
chlamydocin and epi-chlamydocin, synthesis, 3573
cyclic tetrapeptide HC-toxin, synthesis, 5309
cyclic tetrapeptide related to chlamydocin, homo- and hetero-nuclear NMR, 2553
cytostatic cyclic tetrapeptide, chlamydocin synthesis, 5305
dehydrooligopeptides, synthesis using Δ NCA as building block of α -dehydroamino acid residue, 2175
development, block α -D-Gal(1-to 3)-D-GalNAc, simultaneous selective coupling, units to OH groups of

- amino acid containing peptides to O-glycopeptides, 1759
- diastereoselectivity, esterolyses of LL and DL-Z-Trp-Pro-PNP by thiocholine surfactant, 2615
- dipeptides via unmasking of 5-aryl and 5-acyloxy-aminoxazoles, 5155
- hydroxyethylene and ketomethylene dipeptide isosteres, synthesis, 4401
- kinases, c-AMP-dependent, multi-substrate adduct inhibitors, 1121
- linear octapeptide bound to 2,3-diamino-6,7-dihydroxyquinoline chromophore, 4877
- octaethylporphyrinatrorhodium, oxygenation of olefins with tetrathydroborate and dioxygen, 1183
- synthesis and conformation of gramicidin S, and its precursor bis(benzyloxycarbonyl)gramicidin S, 3737
- synthesis by reaction of amino acids with oxallates, 4451
- synthesis of γ -dipeptidyl ester of ATP, 1121
- synthesis of 6-,9-,12-, and 15-membered cyclic decapeptides, 1921
- tetrapeptide tentoxin, structure by mass spectra, 2163
- thiopeptide linkages from oligopeptides with new thionation reagents, 3815
- undervived characterisation by CID/MIKE spectrum, and use of ionisation method MBSA-FAB, 2263
- Peroxides and peracids**
- addition of singlet oxygen to alkoxy and trimethyl-siloxy-butadienes, formation of new peroxides, 4291
- CoTPP-catalysed rearrangement of 1,4-endoperoxides, 311
- cycloheptatriene 1,4-endoperoxide, mechanism, of CoTPP-catalysed reaction, 4135
- endoperoxides, intermediates in photo-oxygenation of enol forms of 1,2-cyclohexadiones, 803
- formation of α,β -epoxy systems from β -peroxy carbon free radicals, 3169
- hydrogen peroxide, reaction with silyl enol ethers, 1737
- mutagen [E]-azoxybis(methylene) bis(3-chlorobenzoate) formed in 3-chloroperoxybenzoic acid reaction mixtures, 2819
- new stable peroxides prep, 4669
- peroxides and hydroperoxides, intramolecular alkylation, 543
- peroxy-bromides, reaction with Ag ion, cyclic peroxide formation and peroxide transfer via peroxonium intermediates, 543
- peroxylactones, transformation to α -phenoxystyrene, 4699
- ring opening of cyclic α -t-butyl dimethylsilyloxy hydroxy-peroxides, 4439
- synthesis of α -silyloxyhydroperoxides, 1737
- transformation of α -azobenzyl hydroperoxide into benzoic acid, oxenoid intermediate, 3109
- Phanes**
- conformation of dithia[3.3]azuleno-phanes, 2199
- crystal and molecular structure [6]paracyclophan-8,9-dicarboxylic acid dimethyl ester, 707
- cyclophanes incorporating 1,3-disubstituted ferrocene moiety, spectroscopy and X-ray, 5757
- cyclophanes, prep by photodeselenation of diselena[3.3]-cyclophanes, 2593
- electrocyclic ring closure of [2.2.6]paracyclophanepentaene, structure and dynamic stereochemistry of product, 5407
- flavinocyclophane, synthesis and structure, 1925
- lower singlet excitations of [2.2]paracyclophane quinhydrones, theoretical study, 2159
- preparation of 8,11-dichloro-[5]-metacyclophane, 1817
- reactions of [6]paracyclophane-8,9-dicarboxylic acid diethyl ester, 2549
- regioselective approach to cyclophanes, 4895
- single-decked [8](3,7)-tropolonophane, synthesis, 3879
- stereoisomers of [2a] paracyclophanehexaene, synthesis and interconversions, 5411
- structure and conformation of [5]metacyclophanes, spectral and theoretical study, 1821
- synthesis and unusual reaction of (1,3)pyrimidino (6,9)purinophanes, 5253
- synthesis of (E,E,E,E)-[6.6]paracyclophane-1,5,13,17-tetraene, 4413
- synthesis of [1.1.1]paracyclophane, 5277
- triple layered [2.2]naphthalenophane, synthesis, 4851
- Phenols**
- albanols A and B from *Morus alba* bark, structures, 3013
- alkenylphenols, prep without protection of phenol group, 193
- deblocking p-nitrobenzyl protected bases and phenols, using H₂O₂, 1385
- deuterium incorporated into 2-n-hexyl-5-n-propylresorcinol, Eu(fod)₃-shifted ²H NMR as probe chirality, 5261
- induced deprotonation, ¹³C NMR, 177
- oxidation by O₂ in presence of u-oxo cupric catalyst dependent on catalyst/phenol ratio, 5611
- oxidation, o-(3-butenyl)phenols to 2,4-cyclohexadienones, 147
- oxidation, stereoelectronic factors, 1071
- phenol by oxidation of benzene, 4847
- phenols, synthesis of arenes by coupling aryl triflates with organocopper reagents, 2723
- synthesis via 3-isopropyl-2,4,6-trimethyl pyrylium salts, regioselectivity of ring closure, 2259
- trimethylphenol, Ru-catalysed oxidation with H₂O₂, 5249
- Pheromones**
- aggregation pheromone, (\pm)-lineatin synthesis, 3021
- aggregation, synthesis of *threo*-4-methylheptan-3-ol, 5177
- Anastrepha* male pheromone, novel lactone components, 2611
- bombykol and three geometrical isomers, stereospecific synthesis, 1527
- chrysolmelidial and loganin, synthesis, 5807
- component of fire ant queen, synthesis and stereochemistry of tetrahydro-3,5-dimethyl-6-(1-methylbutyl)-2H-pyran-2-one, 1893
- fire ant queen, prep of (E)-18-(1-pentenyl)-2H-pyran-2-one, 1689
- identification of component from *Boarmia selenaria*, 5505
- intermediate for synthesis of (\pm)-frontalin, (\pm)-cinenic acid and (\pm)-linalyl oxide, 2567
- new pheromone structure for Sesiid moths, 1007
- of *Lobesia botrana*, (7E,9Z)-7,9-dodecadien-1-yl- acetate, 2513
- precursors to fragranol and grandisol, synthesis, 423
- racemic endo-brevicomine, stereoselective synthesis, 4163
- rectal gland secretion of fruit fly, new synthesis of 1,7-dioxaspiro[5.5]undecanes, 3905
- spiroketal component, 4-hydroxy-1,7-dioxaspiro[5.5] undecane, synthesis, 5915
- stereo and regioselective synthesis of (E)-dodecadiene-1-yl acetate and (E,E)-1,3,5-undecatriene, 2665
- stereoselective synthesis of (E,E)-conjugated dienes, 1247
- synthesis of (\pm)-heliotridane and (\pm)-nuphar indolizidine, 4249
- synthesis of (9Z,11E)-9,11-tetradecadienyl acetate, 4319
- synthesis of 7(E)-dodecyl acetate and dihydrojasmane, 1041
- two enantiomeric 5-hexadecanolide, synthesis, 2023
- Phosphates**
- allylic phosphates, by conversion of phosphoric esters with sulphonium group in γ -position, 4327
- allylic phosphates, reaction with PhMe₂Si-ALeT₂, 2015
- chlorophosphates S_N2(P) reactions, inversion of configuration and dependence on nucleophile, 4323
- deblocking of protecting groups from 3'-terminal phosphodiester, 873
- enol phosphates, cross coupling with PhMe₂SiMt1(Mt1=ALeT₂ or MgMe), 2015
- Grignard reagents, reaction with 1,3-alkadien-2-yl phosphates, synthesis of conjugated dienes, 5137
- of nucleosides prep via OH activation, 1165
- organocuprate reactions of 1,3-alkadien-2-yl phosphates, synthesis of allenes, 1297
- preparation of 2,2-difluoro-1-arylethenyl diphenyl phosphates from chlorodifluoromethyl ketones, 5657
- stereoretentive conversion of dialkyl phosphorothioates into [¹⁸O]-phosphates, 3899, 5677
- tetraethyl ethynylidiphosphonate, addition of amine nucleophiles, 1679
- triester approach, oligonucleotide synthesis on porous glass, 747
- Phosphenes**
- diaryldiphosphene reaction with hexacarbonylchromium(0), 4855

- new route to diphosphene, 4219
stable unsymmetrical diphosphenes, formation, 2031
- Phosphines**
dimethylaminoacetals, reaction with tri-*t*-butylphenylphosphine, 5855
preparation and characterisation of sterically protected primary phosphine sulphide and oxide, 4227
preparation of 1,8-bis-(phosphino)-1,3,5,7-octatetraene by rearrangement of cyclooctatetraenedilithium with R_2P-Cl , 1955
reaction of ethynylidiphenylphosphine oxide with primary, secondary and optically active amines, 5865
rearrangement, *N*-methyl-*N*-propargylaminodiethylphosphine to *N*-methyl-*Z*-3-diethylphosphino-2-propenal imine, 1643
species $[(C_6H_5)_2PO]M$, prep and structure by ^{31}P NMR, 1791
triphenylphosphine-tetrachloromethane-potassium carbonate, chlorination and dehydration of 1,2-diols, 661
- Phosphinic acid and derivs**
optically active 2-aminoalkylphosphinic acid esters, prep, 2935
- Phosphites**
phosphite chemistry, solid phase synthesis of polynucleotides, 1019
phosphite approach, oligodeoxynucleoside methylphosphonates synthesis on glass polymer, 877
trimethyl phosphite, synthesis of (\pm)-phosphinothricine, 2391
- Phospholanes and phospholes**
Diels-Alder reactions of 1,3-benzoxaphospholes and 1,3-benzoxaarsoles with 2,3-dimethylbutadiene but cycloaddition with tetrachloro-*o*-benzoquinone, 5481
formation of 1,3,2-diazaphosphole derivs, 2137
irradiation of 1-phenylphosphole oxide-cyclopentadiene and 1,2,5-triphenylphosphole oxide-cyclopentadiene adducts, 3353
phospholium salts and phosphole oxides, preparation, 1423
preparation of 2,2-dihydro-5-imino-1,2-oxaphosphol-3-enes, 1837
- Phosphonic acid and derivs**
applications toward rethrolones and prostanoid synthesis, 3443
butadienylphosphonates with electro-negative substituents and synthesis of functionalised cyclopentenylphosphonates, 767
dialkylphosphonates conversion to 2-hydroxyphosphonate esters, formation of C-P bond, 5899
methylenephosphonate sugars substituted at anomeric C, prep, 2631
new phosphonoesters reagent yielding *Z*- α,β -unsaturated esters, 4405
optically active 2-aminophosphonic acid esters, prep, 2935
prep and transformation of dialkyl-1-hetaryl-1-hydroxymethyl phosphonates to heterocyclic aldehydes, 5599
stable metadithiophosphonate, formation, 5885
synthesis of (*Z*)-1-[(diethoxyphosphinyl)oxy]-*F*-1-alkene-1-phosphonates from *F*-alkenyl chlorides and triethyl phosphites, 4229
synthesis of *D,L*-phosphotryptophan, 5461
synthesis of uracil-5- and adenine-8-phosphonic acids, 2571
- Phosphonium salts**
enantiospecific synthesis of (3*S*-hydroxy-2*S*-methyl)butyltriphenylphosphonium iodide, precursor for chiral side chain of pseudomonoc acid C, 3657
phenolic aldehydes, condensation with phosphonium salts, 193
phosphonium and pyrrolizone phosphonium betaines of azacyclopentadienone type, prep, 2977
reagent for synthesis of secondary allylamines, *N*-alkyl- β -aminoethylphosphonium salts, 3043
- Phosphonous acid and derivs**
thermal reactions, (2,4,6-tri-*t*-butylphenyl)phosphonous dichloride and derivs, 933
- Phosphoramidates**
deoxynucleoside phosphoramidates, investigation, 245
phosphitylation of protected nucleosides, prep of β -cyanoethyl monochlorophosphoramidates of sec amines, 5843
preparation of deoxynucleoside phosphoramidates, 1963
study of P-N bond by ^{15}N and ^{31}P NMR, 4989
toxin isolated from *Ptychodiscus brevis*, 0,0-diphenyl-*N*-cyclooctyl phosphoramidate, 855
- Phosphoranes**
cyano substituted methylene triphenyl phosphoranes, reaction with cyclopropenones, 2977
phosphoranyl radicals, structure, 3377
reaction of dienes at bridging P in P-methylphosphole dimers, pentalkyl phosphorane intermediate, 5831
synthesis of chiral 2-oxoalkylidene-triphenylphosphoranes, 2505
trimethylsilylethoxymethylene triphenylphosphorane, homologation of carbonyl compds, 573
- Phosphorins**
acylation of 1-*t*-butyl-1-chloro-4*R*(3-*R*)- λ^3 -phosphorins, 5051
chlorination of 1-*t*-butyl-1,3-dichloro- λ^3 -phosphorins, prep of di-, tri- and tetra chloro-substituted λ^3 -phosphorins, 2645
dicyclohexylammonium salts of 2-hydroxy-2-thiono-4-methyl-1,3,2-dioxaphosphorinane conversion to corresponding 2-[^{18}O]-oxo derivs with retention of config at P atom, 3899
formation of 1,2,5,6-tetrahydro- λ^3 -phosphorins, 3591
nucleophilic substitution of 3-halogeno- λ^3 -phosphorins, with alkali metal amides, 5055
- Phosphorus compounds**
compound with P=As, phospho-arsene, isolation and characterisation, 3625
first phospho ketene, properties, 2639
formation of 2,3-dihydro-1*H*-phosphindoles, 933
optically active (*E*)- β -(amino)vinyl-diphenylphosphane oxide and (*E*- β -(amino)vinyl-diphenylphosphane, prep, 5865
phosphaaikanes, cycloaddition with dimethylbutadiene forming 1,2,5,6-tetrahydro- λ^3 -phosphorins, 3591
phosphanes containing one CF₃-group, 5509
phosphirenium salts, synthesis, 643
photo reactions of phospho alkenes, 1975
preparation of 3-phenyl-3-benzophosphopin, 2545
preparation of 3-phosphenes and 3*a*,7*a*-dihydrophosindoles, 5831
preparation of 9-phosphonia-barbaralane, 3981
trivalent P, propargylheteroatom substituted, rearrangement, 1643
- Phosphoryl compounds**
bifunctional phosphorylating agent, 2-chlorophenyl-0,0-bis(1-benzotriazolyl)phosphate, use to prepare DNA fragments, one decamer and one heptadecamer, 3989
new phosphorylating agent, cyclohexylammonium *S*-phenyl phosphoranilidothioate, prep, 5741
phosphorylation of *N*-unprotected nucleosides via aluminium alkoxides, 5641
- Photochemistry**
activation of α,β epoxyketones, 5585
acyl migration of enol ester yielding 3-oxazoline deriv, 1197
addition of 2,3-dioxopyrrolidine-4-carboxylates to alkenes, 1949
addition of nucleophiles to bicyclo[2.2.1]hepta-2,5-diene, 19
benzoylvalerate, effect of ethoxycarbonyl group on 1,4-biradical cyclisation, 1995
chiral induction in oxetane formation, 3217
closure-to-cleavage ratios of triplet 1,4-biradicals, cycloaddition of isobutylene to 5-substituted uracils, 4055
codimerisation of cyclohexene and cycloheptene, 1419
conversion of 1,1-diarylcyclopropanes to 1,1-diarylpropenes and 1-aryllindanes, substituent effects, 41
cumulene, 2523
cyclisation and H-abstraction in maleimide derivs, 1841
cyclisation of 2-alkoxy-3-aryl cyclohexenones, 5887
cyclisation of heliangolide, 5429
cyclisation of *n*-methylene dicinnamates, MeO substituent effect and topoactic assistance by methylene chain, 4237
deconjugation of β -alkyl- α,β -unsaturated esters, effect of base on product distribution and rate, 4299
deselenative ring contraction of diselenacyclophanes, 2593
different behaviour of 1,3-bis (α -

- diazobenzyl)benzene in soln or in crystals and matrices, 1723
- dimerisation of 1,3-dimethylthymine in liquid crystal media, 5107
- dimerisation of acenaphthylene and 1-derivs in soln and micelles, 4091
- dimerisation of olefins and cleavage of cyclobutane derivs, 5815
- dimerisation, of N-benzyl-1,4-dihydropyridinamide, 5399
- dimers of 1-substituted acenaphthylene, structure and configuration, 4095
- dye sensitised oxidation of 1-methylindolyl-3-acetic acid, 3749
- effect of carbene olefin complexation on relationship between absolute rates from laser flash photolysis and product ratios, 4763
- electron-transfer oxygenation of 1-butyl-2,3-diphenylaziridine, formation of 1,2,4-dioxazolidine, 3047
- electronic effects, semiconductor catalysed oxidative cleavage of olefins, 547
- enol forms of 1,2-cyclohexadiones photo-oxygenation, 803
- fragmentation of phthalide in low temp matrices, 4373
- intramolecular cycloadditions, 1, ω -bis(4-vinylxyphenyl)alkanes, 3849
- irradiation of oxygenated solns of η^3 -allylpalladium complexes, regioselective oxidation of allyl group, 4567
- irradiation, 1-(2-anthranil)-3,3-dimethyl-1-butene, isomerisation from cis- to trans-isomer, 2873
- irradiation, 1-phenylphosphole oxide-cyclopentadiene and 1,2,5-triphenylphosphole oxide-cyclopentadiene adducts, 3353
- irradiation, 4-pyrimidinone to 5-carboxypyrimidinone betaine, 5237
- irradiation, 5,5-diphenylpent-4-en-1-ol, sensitised by 9,10-dicyanoanthracene under N_2 or O_2 , 461
- irradiation, acetylenic 3H-pyrazole and bis 3H-pyrazole, 1775, 1779
- irradiation, alkylbenzenes, oxidation and dimerisation, 4275
- irradiation, alkylbenzenes with alcoholic moieties, formation of alkylbenzene carbinols, 3439
- irradiation, azobenzene-appended γ -cyclodextrin, binding ability for (-)-borneol and (\pm)-fenchone, 5245
- irradiation, cis-8-X-mercuri-2,3,5,6-dibenzo-bicyclo[2.2.2]-octa-2,5-diene-7-ol acetate and trans-diastereoisomer, 5839
- irradiation, oxygenated soln of η^3 -allylpalladium complexes, 4567
- laser photolysis of 1-naphthylidiazomethane or azirine in acetonitrile, 3955
- mechanistic aspects of photocycloadditions, isobutylene to 5-substituted uracils, 4055
- novel reaction of 3-nitro-2-phenyl-2H-chromene in methanol, 2209
- of benzohydroxamic acids, 5551
- oxidation of alkanes by metal oxide semiconductors, 5071
- oxidative decarbonylation of 5-methylfurfural, cyclic and acyclic pathways, 1193
- oxygenation of enol forms of 1,2-cyclohexanediones, 803
- oxygenation of polycyclics with phenolic ring fused to saturated rings, 5779
- photoartefact from linderazulene, 4461
- photolysis and pyrolysis of isogermacone, 947
- photolysis of cis- and trans-2-(3,5-dimethoxyphenyl)cyclopentyl methane sulphonate, 4521
- photolysis of α,α -disubstituted cyclobutanones to terminal olefinic esters, 2067
- photolysis of 1-azido-4-methyl bicyclo[2.2.2]octane and 1-azido-adamantane in low temp matrices, 3887
- photolysis of 2,3-diazatricyclo-[4.3.0.0^{*,*}]non-2-ene, 5473
- photolysis of 26-hydroxy-furostans, 4621
- photolysis of a bi-(1-pyrazolin-4-ylidene) and generation of a TME biradical, 4743
- photolysis of diazoamides, 233
- photolysis of diphenyldiazomethane in polycrystalline (S)-2-BuOH, 3689
- photosensitised cis-9-styryl-acridines, high enthalphy value in thermal isomerisation, 3903
- preparation of tricyclopentanoid system, preliminary model for light energy storage, 2781
- pyrimidinium-4-olates, cycloaddition with singlet 1O_2 to form stable peroxides, 4669
- reaction of 3-aryl-2-isoxazolines with methylated benzenes, 2279
- reactions of (+)-4 α -acetyl-2-carene, 3025
- reactions of N-benzoylformyl-N-(phenylthiocarbonyl)amines and an N-benzoylformylurethane, 1169
- reactions of phosphalkenes, 1975
- reactivity of 5-alkenyl or dialkenyl-1-phenylpyrazoles, 4679
- rearrangement of 3-aza-1,2,2,4,4,-pentaphenylbut-3-en-1-one, 1089
- reduction of N-methylphthalimide with 2,3-dimethyl-2-butene, directive effects of substituents, 1879
- reversible dimerisation of phenylbutadienes in solid state, 3263
- ring enlargement of N-imino-pyridinium ylide, formation of two chlorodiazepines, 3327
- selective transformations of two different bichromophores incorporated in one molecule, 3025
- semiconductor photocatalysed cleavage of olefins, electronic effects, 547
- singlet oxygen oxygenation of thioketeneacetal, 673
- singlet oxygen reaction with 1-acetyl-2-methoxycyclopentene, 5189
- site- and regio-selectivity of di- π -methane transformations of 5,6-benzo-2-azabarrelenes, 2271
- stereocontrol on photo behaviour of α -methoxy- β,γ -cyclopropyl cyclic ketones, reactions of epimeric 3-methoxy-4-caranones, 3917
- stereoelectronic aspects, [$\pi 2^*_o$]cycloadditions in tetracyclo-[4.4.0.0^{2,7}.0^{3,7}]dec-4-ene system, 2147
- stereoisomers of [2₆]paracyclophanehexaene, synthesis and interconversions, 5411
- substituent and wavelength effects in 5,6,7,8-tetrachloro-3,9a-dihydro-2,3,9a-triairyfuro[2,3-b](1,4)benzodioxin derivs, 3745
- synthesis of β,γ -epoxycyclohexanones, 107
- synthesis of 8H-thieno[2,3-d]azepines by photolysis of 6-azido-2,3-dihydrobenzo[b]thiophen, 5147
- trapping of intermediates with oxygen in cycloaddition of cyano enone with olefins, 2195
- UV irradiation, tetra-, tri- or diphenylallenes in methanol to allylic methyl ethers, 1107
- wave length dependency of 5-methyl-1,5-hexadiene-3-one, 2961

Photoelectron spectra

spectral comparison of tetra vinylmethane with trans, trans, trans-1,2,3,4-tetravinylcyclobutane, through-bond and through-space interactions, 1149

spectrum of 6,7-dithiabicyclo-[3.2.1]octane, 319

ultra long-range through-bond interactions in dithiaspirane disulphoxides, 2957

Physical studies

can ground state destabilisation of a α -nucleophile induce and α -effect, 4777

effect of ultrasound on solvolysis of t-butylchloride in EtOH, effect of temp, 4371

good conductor complexes, synthesis, 3107

high pressure addition of activated acyclic donors with β,β -disubstituted enone acceptors, 3841

high pressure conjugated addition of activated enols to O-silylated ketene acetals, 4943

high pressure to afford protected alcohols, 5709

kinetic versus thermodynamic acidity of α -sulphonium protons, 839

pressure induced changes in solvent sorting by solute molecules, 2427

purification orientated synthesis, oligodeoxynucleotide synthesis in soln, 751

ultrasound, application to N-alkylation of amines, 5907

Pigments

antifungal and cytotoxic hydroxy-heteroperylene-diones, from *Aternaria* sp, structures, 5653

bacteriorhodopsin, blue shift of protonated retinal Schiff base, 1745

blue pigments of *Centaurea cyanis*, structure, 5749

coprobiliverdin III, synthesis and characterisation, 3975

cyclic prodigiosin from *Beneckea gazogenes*, 2791

cycloprodigiosin, revised structure, 2701

from *Rhodospseudomonas sphaeroides*, novel pigment, 5703

siderophore of *Pseudomonas aeruginosa*, 4877

Piperazines

diketopiperazine conversion to (+)-bicyclomycin, 5627

Piperidines

formylation of Grignard reagents, with N-(N-formyl-N-methyl)amino-piperidine, 1143
homoallylic substitution of piperidine with 1-bromo-1-cyclopropyl alkanes, 5031
phenacylidine, conformation, temp and solvent effects, 1855
preparation of 2-cyano- Δ^3 -piperidine, 1493
resolution, 3-PPP and assignment of absolute configuration, 343
synthesis of 2-alkenylpiperidines in E-configuration, 3997
synthesis of 2-alkenylpiperidines with E-configuration, 3997
tripiperidinomethane condensation with *o*-nitrotoluenes, 4561

Platinum and compounds

colloidal Pt as catalyst for metalloenzymes and metalloenzymes reduction, 5005
isolation and characterisation, novel 1-substituted 2-platinabicyclo[1.1.1]pentane complexes, 2595

Polycyclic aromatic compounds

acyl anthranils, solid state hydrolysis, role of H-bonds, 723
adduct of dimethylacetylenedicarboxylate and pyrrolidine enamine of 3-methylthiochroman-4-one, pentacyclic structure, 2413
anthranilic acid, deblocking of 2,2,2-trichloroethylphosphate protecting groups, 873
anticancer cembrenol, (\pm)-asperdiol synthesis, 2267
Aternaria sp, antifungal hydroxy-hydroperyllene-diones, isolation and structures, 5653
azulenoid character of bridged 14 π -annulene, 2151
benzil and 9,10-phenanthrene-quinone, transformation to benzoic acid type esters, 3287
benzoannelated perhydroazulenes, linear and angular, prep, 5585
bicyclic or steroidal phenol, synthesis of *p*-quinol, 5779
cannithrene-2, synthesis, 5419
cis-tris-[2.2.2]- δ -homobenzene, synthesis and thermolysis, 2143
clerodin and caryoptin, stereochemistry and conformations, CD and ORD spectra, 5631
conversion of 9-methoxymethyl-, 9-trimethylsilylmethyl- and 9-thiomethoxymethyl-anthracene into carbanions, 4645
conversion of N,N-diisopropylbenzamide and dienophiles to N,N-diisopropylamino-2-carboxy-4-hydroxy-1,3,4-dihydronaphthalenes, 2945
conversion, 3-acyl-4-hydroxy-coumarins to 4-oxo-1-phenyl-1H-[1]benzopyrano[4.3-*c*]pyrazoles or 4-oxo-2-phenyl-2H-[1]benzopyrano[4.3-*c*]pyrazoles, 381
dihydrophenanthridinium compds, Stevens rearrangement, 1553
diligustilide, new dimeric compd, isolation and structure, 4677
direct epoxidation by superoxide in presence of phosgene dimer, 3481

Friedel Crafts reaction, 2-chloro-2-alkylthiopropionate and 2-methoxy-naphthalene, 1531
generation and ESR of 1,8-dihydroxy-9-anthron-10-yl radical, 4465
hexahydronaphthalene moiety of (+)-mevinolin, synthesis, 3703
hexahydronaphthalene portion of compactin, synthesis, 1373
hexakis(phenyloxy)benzenes, synthesis, X-ray analysis and acetonitrile clathrate of hexakis(3,5-dimethylphenyloxy)benzene, 3269
intermediate for 4-demethoxy-anthracyclinones, 5623
intramolecular of nitrile oxide, prep of hydroazulene ring system, 3705
intramolecular reaction of 1-benzoylphenanthrene oxide to K-region oxide 1-benzoyl-9-10-epoxy-9,10-dihydrophenanthrene, 2327
lepidopterenes conversion to dianthrylethanes, 3273
linderazulene, photoartefact from, 4461
linear sesquibiphenylene, benzo[3,4]cyclobutal[1,2-*b*]biphenylene, synthesis, 299
malachite green, reaction with N-substituted dihydropyrimidines, 209
methyl substituted benzanthracene and benzanthracene derivs, synthesis, 1221
monohydroxyanthraquinones, introduction of functionalised 3-carbon chains, 4809
naphthalene deriv by rearrangement in 1,3'-bicyclopropenyl series, 983
new crown (9,10)anthracenophanes from 9,10-bis(trimethylsilyloxy)anthracene, 5215
new dimeric compd, (*Z,Z*)-6,7-*cis*[6.6',7'.3'-*a*]di[3-butylidene]4,5-dihydrophthalide, 4677
new diol (*Z*)-3-butylidene-4,5-dihydro-6,7-*trans*-dihydroxyphthalide, 4675
new synthesis of naphthalene, anthracene and phenanthrene structures, 3533
novel triptycenes via intramolecular Diels-Alder reactions of dianthrylethanes, 3273
palytoxin, stereocontrolled synthesis of C.85-C.98 segment, 2243
photodimerisation of acenaphthylene and 1-derivs in soln and micelles, 4091
photodimers of 1-substituted acenaphthylenes, structure and configuration, 4095
polycyclic hydrocarbons, reaction at K-region with N-bromocetamide leading to cyclised arene oxides, 4903
possible synthesis of [6.5]-coronane, 5351
pyrolysis of *o*-methoxybenzylidene chloride, formation of benzofuran, anthracene or 1-chlorobenzocyclobutene, 609
quassinoids, micellar catalysis in aqueous Diels-Alder, rate acceleration and selectivity, 1897
quinazarin conversion to intermediate for 4-demethoxy-anthracyclinone synthesis, 2319

radical trianions of conjugated hydrocarbons, models for ESR, 3595
reaction of 8-naphthol with N,N-dimethylhydrazine, 1601
reaction of diphenyl disulphide with 1,8-dehydronaphthalene, 821
revised structure of pseudo-anisatin, 771
Rh catalysed oxidation of anthracenes to anthraquinones using *t*-butylhydroperoxide, 5499
sclerosporin, revised structure, 1703
single molecule and crystal state conformation of 9,10-dihydroanthracene, 2893
skeletal enantiomerism in benzo[9]-annulene, 4279
sodium naphthalene, reductive demercuration and symmetrisation of organomercuric halides, 973
stable cycloprop[*e*]azulenide anion, prep, 4585
stereoselective synthesis of S(-)-[1,1'-binaphthalene]-2,2'-diol, 3261
synthesis and configuration of *trans*-3,4-dihydrodiols and 3,4-diol-1,2-epoxides of benzo[*c*]phenanthrene, 1349
synthesis and properties of 1,2,3,4,5,6-hexahydrobenzo-[1,2:4,5]-dicyclobutene-3,6-dione, 1727
synthesis of (\pm)-quadron, 2949
synthesis of 3-acetoxyisotwist-8-en-2-ones, 147
synthesis of cyclohept[*a*]-azulenylum ion, 14 π electron system, 69
synthesis, 7,9-bisdeoxycarminomycinone from 5-hydroxy-quinizarin, 519
tetramethanonaphthalenes, short H-H non-bonded distances and orbital interactions through eight δ bonds or through methylene groups, 5415
total synthesis, (+)-monacolin K, 1811

Polycyclic cycloalkanes
alkylation of 9-phosphabicyclo-[6.1.0]nona-2,4,6-trienes, 3981
bridged bicyclic olefins cycloaddition to dichloroketene, 3811
bridged polycyclics, π -tilting, 4747
bridgehead meso dienes re-arrangements of 1,n-divinyl bicyclo[n.m.0]alkanes, 4173
bridgehead olefinic isomers of triquinacene skeleton, prep, 4563
CD spectra of 2,3-dimethylidene-5-norbornyl derivs, 3607
cis, *syn*, *cis*-tricyclo(6.3.0.0^{2,6})-undecane-4,10-dione and derivs from pentacyclo-undecane-8,11-diones, 809
competitive cycloadditions, tetracyanoethylene to bicyclo-[3.2.1]octa-2,6-diene, 2047
condensation, rac-2-norbornanone and chiral α -phenylethylamine, correction, 2999
conversion, bicyclo[3.3.0]octane-3,7-dione to bicyclo[3.3.0]oct-1-ene-3,7-dione, symmetry as complicating factor, 5577
Corey's lactone, perhydro-pentalenone equiv from, 3527

- correlated internal rotation in bis(2,6-dichloro-9-triptycyl)-methane, 5359
- denitrogenation of optically active 9,10-dihydro-5,6-diazalumbullvalene, 5513
- dienophilic and dipolar additions to bicyclo[2.1.0]pent-2-ene, 5727
- differential bridging in solvolysis of 6- and 7-substituted 2-exo- and 2-endo-norbornyl *p*-toluenesulphonates, 3195
- diradical bicyclo[2.2.1]heptane 2,6-diyl, chemical transformations, 1699
- diradicals in vinylcyclopropane rearrangement of bicyclo[3.1.0]-hexane derivs, 4595
- eclipsed bicyclopentyl, bond shortening in, 2431
- enol boranes, exchange with N-trimethylsilyl imidazole, 5695
- enone ketal from bicyclo[3.3.0]octane-3,7-dione, prep of diquinane intermediates, 5575
- facile synthesis of dicyclohepta-[cd,gh]-pentalene, 781
- formation of tricyclo[7.1.1.0^{4,10}]undeca-2,4,6,8-tetraen-10-ol, 4261
- functionalised bicyclo[3.3.0]octane, synthesis, 5807
- hydrocarbons with central CH₂, one bond ¹³C-¹³C coupling constants dependent on C-C bond angle, 7
- intermediacy of 3-t-butoxy-1,2-dehydroquadracyclane, 4813
- intermediate 2,6-dimethyl-2,6-tetrahydropyran-2-one in synthesis of (±)-frontalin, (±)-cinenic acid and (±)-linaloyl oxide, 2567
- intermediate for synthesis of steroids and triticothecanes, *syn*-7-benzoyloxy-4-methylbicyclo[2.2.1]-hept-5-en-2-one, 2931
- isoclovene synthesis, unusual tricyclo[6.2.2.0^{5,12}]dodecane system, 5669
- isolation and characterisation, 2-[bis(pyridine)dichloroplatinol-1-cyanobicyclo[1.1.1]pentane, 2595
- isomerisation of *trans* bicyclo[4.1.0]hept-3-ene to *cis*-isomer, 3431
- molecular mechanics, calculations on pentaprismane and hexaprismane, 3697
- new approach to bicyclo[5.2.1]-decane system, 3259
- new humulene derivs, 4695
- nitrogen expulsion and formation of semibullvalenes, 5513
- ortho esters of 2,6,7-trioxabicyclo[2.2.2]octane series, synthesis, 5571
- oxidation of trimethylene norbornane, 3259
- oxygenated hexalin, octalin and decalin derivs in soln and solid state, ¹³C NMR, 4555
- pathway from bicyclo[4.4.1]undeca-1(10),2,4,8-tetraen-11-one to 4-methylazulene, 4261
- photochemistry of (+)-4 α -acetyl-2-carene, 3025
- photocyclisation of a heliangolide, 5429
- preparation of chiral 2,5,8-trioxabicyclo[5.2.0.0^{3,6}]nonane, 2557
- product structures and distribution, acid induced decomp of 7-substituted 3-diazo-2-norbornanones, 2419, 2423
- reaction of 1-cyanobicyclo[1.1.0]butane with di- μ -chlorodichloro bis(ethylene)-diplatinum, 2595
- reaction of 3H-cyclohept[azulene]-5-ones with haloketenes, 781
- reaction of alkylmagnesium compds with endo bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic anhydride, 1929
- reaction of tetracyclo-[3.3.0.0^{2,4},0^{3,6}]oct-7-ene with HCl and DCl, formation of edge- and corner-protonated cyclopropanes, 4599
- rearrangement in 1,3-bicyclopropenyl series, 983
- reduction, cyclisation and synthesis of N(3-butenyl)-morpholin- and -thiomorpholin-2,6-diones, 91
- regiospecific and reversible cycloreversion of trishomocubanes to *cis*, *syn*, *cis*-tricyclopentanoids, 2781
- regiospecific synthesis, 1-carbomethoxy-3-methyl-9-oxobicyclo[3.3.1]non-2-ene, 699
- resolution of dl isomers of bis(2- and 3-chloro-9-triptycyl)methanes and ethers, 791
- ring opening of 2,3,4-triphenylendo-tricyclo[3.2.1.0^{2,3}]octane initiated by proton transfer, 3225
- selective entry to sinularene and longifolene skeletons, 681
- semibullvalenes, substituted, mechanism of formation from triazines and cyclopropenes, 1485
- sequential inter- and intramolecular Michael reactions using bicyclo[3.3.0]octenone, 2125
- solvolysis of 9-chloropentacyclo[4.3.0.0^{2,4},0^{3,6},0^{5,7}]nonane, Coates chloride under press, 2429
- stereoselective synthesis of (±)-(Z)-2-(3 β ,5 α -dihydroxy-2-methylenecyclohexylidene)ethylidene-cyclohexane, 4257
- structure of solid di-9-pentacyclo[4.3.0.0^{2,4},0^{3,6},0^{5,7}]nonyl ether, 2431
- substituted 3-oxabicyclo[3.3.0]oct-7-en-6-ones, organocobalt mediated synthesis, 2905
- substituted bicyclo[4.4.1]undec-1-ene, synthesis, 3423
- syn*- and *anti*-sesquinorbornene, molecular and electronic features, 5289
- synthesis and properties of 2,5-etheno[4.2.2]propella-3,7,9-triene and methoxycarbonyl derivs, 3361
- synthesis of 3,7-dicyano-4-bromo-3,7-dicyano- and 2,6-dibromo-3,7-dicyano-1,5-dimethyl-semibullvalenes, 5591
- synthesis of bicyclo[n.3.1]alkenes, 657
- synthesis of bicyclo[4.3.1]deca-1,5-diene, 4165
- synthesis of cyclohept[azulenylium] ion, 14 π electron system, 69
- synthesis of tricyclo[3.2.1.0^{2,4}]octanes, 4493
- synthesis of tricyclo[6.2.2.0^{1,6}]dodecane and tricyclo[6.3.1.0^{1,6}]dodecane ring systems, 5919
- synthesis, *cis*, *endo*-2, 6-bis(hydroxymethyl)bicyclo[3.3.0]octa-3,7-diene, 1361
- tetracyclic alkenes, regiospecific synthesis, 2757
- tetracyclo[4.4.0.0^{2,4},1^{0,3,7}]dec-4-ene system, stereoelectronic aspects of [p₂⁺]₂-photocycloadditions, 2147
- thermolysis of adamant-1-ylbicyclo[2.2.2]oct-1-yl-norborn-1-ylcarbinol, strain energies of 3 possible radicals and t-butyl radical, 1161
- through bond and through space interaction in 1,5-dimethyl-3,7-dimethylene tetracyclo[3.3.0.0^{2,4},0^{3,6}]octane, 5063
- trans*-fused angularly methylated decalins, Diels-Alder approach, 4529
- transformation, 1,5-bismethylene-cyclooctane to bridge-head substituted bicyclo[4.3.1]-decane derivs, 1971
- transformation, tricyclo-oct-6-ene to bicyclic skeleton, attack on cyclopropyl σ -bond, 307
- tricyclic cyclobutane deriv, preparation, 353
- X-ray structures for 2,6-dicyano-, 2,4-dibromo-3,7-dicyano- and 4-bromo-3,7-dicyano-1,5-dimethyl-semibullvalene, NMR activation barriers of Cope rearrangement, 5595

Polycyclic heterocyclic compounds

- aromatic heterocyclic N-oxides
- conversion to α -alkylated heterocycles, 889
- aza-polycyclic aromatic hydrocarbons carcinogenicity, 27
- benzodicyclopentadienes, synthesis and conversion to linear sesquibiphenylenes, 299
- bicyclic β -sultams, synthesis and properties, 2131
- bicyclic nitronic esters, ring contraction, 1621
- bicyclic system containing 3,4,5-trihydro-1,3-diazepin-5-ol fused to pyrazole ring, 4789
- cadeguomycin, 2-amino-7-(8-D-ribofuranonyl)-pyrrolo[2,3-d]pyrimidine-4-one-5-carboxylic acid synthesis, 4793
- conversion, 3-acyl-4-hydroxycoumarins to 4-oxo-1-phenyl-1H-[1]benzopyrano[4.3-c]pyrazoles or 4-oxo-2-phenyl-2H-[1]benzopyrano[4.3-c]pyrazoles, 381
- conversion, 6-chloro-9-(tetrahydro-2-pyran)purine to adenine-8-phosphonic acid, 2571
- cyclopropylpyrrolines from dicyclopropyl ketimines, 3409
- Cyridina luceferinol by autoxidation of luceferin, 5753
- derivative from N_a-methyl secodine, 1845
- DNA scission by intercalator moiety, 2-aminodipyrido[1,2-a:3',2'-d]imidazoles, 1523
- donor molecule for highly conductive complexes, 1,4,9,10-tetrathiaanthracene, 2401
- ethanedithiolene-2,2'-bis(1,3-dithiole), synthesis and properties, 3469
- formation of 1-aza-[3.1.1]bicycloheptane ring system, intermediate of femoxetine, 5151

- formation of 2,6-diazabicyclo[3.3.0]- and 2,8-diaza-bicyclo[3.2.1]-octadiene, 2275
- formation of dibenzo[a,h]phenazine, dibenzo[a,i]phenazine and 1-hydroxy-2,2'-azonaphthalene by oxidation of β -naphthylamine with potassium superoxide, 3159
- halogenation of quinoxalino[2,3-c]-cinnolines by hydrogen halides, 3151
- hexacarbonylchromium (0), reaction with 1,2-bis(2,4,6-tri-*t*-butylphenyl)diphosphene, 4859
- hexahydropolyandrocarpidine, revised structure, 1593
- metallo-catenanes, synthesis, 5095
- new synthesis of tetrahydro- β -carboline, 2171
- nuclei of pyrrolizidine and indolizidine, synthesis by 'criss cross' annulation, 4249
- oxadiazabicyclo[3.3.1]nonanes, new type, synthesis, 789
- oxidation product of spermine, 1,5-diazabicyclo[4.3.0]nonane, 1559
- photolysis of 2,3-diazatri-cyclo[4.3.0.0^{1,9}]non-2-ene, 5473
- picroroccellin, structure revision, 1445
- poly ether macrocyclic derivs of phenanthroline, 5091
- polycyclic natural products from intramolecular Diels-Alder reaction of 2-alkenyl-1,2-dihydropyridines, 2711
- preparation, 1-azabicyclobutanes from carbamates, 4197
- preparation, 4-hexadecyl-4'-methyl-, 4-heptadecyl-4'-methyl- and 4,4'-diheptadecyl-2,2'-bipyridines, 31
- preparation, aromatic aldehydes added to (R,R)-2-butyl-1-aza-3-oxa-7-thia-bicyclo[3.3.0]octan-4-one, 3315
- preparation, isolable germirenes, 4083
- preparation, stable N-dialkylphosphoryl tetrahydro-3-benzazepin-1-ones, 1617
- preparation, versatile diquinane intermediates, 5575
- pteridins, 4,7-diaza analogs, prep, 1767
- pyrrolizone phosphonium betaines, indolizine diones and phosphonium betaines of azacyclopentadienone type, prep, 2977
- quinodiazide intramolecular photo-addition, 4773
- quinolines by photolysis of 4-chloro-3-(N-aryliminomethyl) (2H)benzopyrans and benzo-thiopyrans, 3653
- quinoxalines and naphthyridines, reaction with α -halocarbanions, formation of aziridine and cyclopropane rings, 3279
- rearrangement of 7,8-diazatri-cyclo[4.2.2.0^{2,5}]deca-3,9-diene, 2607
- semibullvalenes, snoutenes, azasnoutenes and polycyclic azo compds, synthesis, 4087
- site- and regio-selectivity of di-methane transformations of 5,6-benzo-2-azabarrelenes, 2271
- stable synthetic analog of indole-2,3-quinodimethane, 4-(phenylsulphonyl)-4H-furo[3,4-b]indole, 5435
- strained 5,6-dihydro-4H-pyrrolo-[1,2-b]-pyrazoles, from proline, 1067
- structure, 2:1-adduct of acetylene dicarboxylate and dehydro-nuciferine, 167
- substituted 1,8-diazaanthraquinone structures of diazaquinomycins A and B, 3643
- substituted bicyclic diazenes, reaction with molecular O₂, 4499
- sulphuration of 2,3-di-*t*-butylthio-fumarates with P₂S₅ to 3H,6H-1,2-dithiolo[4,3-c]-dithiol-3,6-dithione, 3577
- synthesis and properties of 1,4-butenediylidene-2,2'-bis(1,3-dithiole), 3473
- synthesis and unusual reaction of (1,3)pyrimidino (6,9)purinophanes, 5253
- synthesis of (\pm)-7-oxo-3-oxa-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 2559
- synthesis of (\pm)-7-oxo-3-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate-3,3-dioxide, 4731
- synthesis of (\pm)-heliotridane and (\pm)-nuphar indolizidine, 4249
- synthesis of (\pm)-aplystatine, 5515
- synthesis of 1,3,4-triazolo(3.2-a)-pyridylum-2-thiolates and 2-amidines, 3523
- synthesis of 1,3,4-triazole(3.2-a)-pyridine derivs, 3523
- synthesis of 4,5-dihydro-pyrazolo[1,5a]quinolines, 4679
- synthesis of 5-acylamino-benzimidazole-2-carbamates, 3155
- synthesis of 5H-pyrrole- and 1H,6H-pyrido[1,2-a][3.1]benzoxazines, 3923
- synthesis of 6H - [1]benzopyranno-[4.3-b]quinoline, 2379
- synthesis of 8H-thieno[2,3-d]-azepines by photolysis of 6-azido-2,3-dihydrobenzo[b]thiophen, 5147
- synthesis of cyclopenta[c]-pyridines, precursors of monoterpene alkaloids, 4193
- synthesis of tetrahydro-*cis*-cyclopenta[c]thiophen-5-one ethylene ketal and transformation to 11-thiacarbacylin analogs, 4871
- tetrahydrocarbazoles containing tertiary amines, stereochemistry of reduction, 1115
- thermal deazetation of 6,6,7,7-tetrafluoro-2,3-diazabicyclo-[3.2.0]hept-2-ene, 4047
- thione reduction, preparation of 5-membered heterocyclics, 339
- total synthesis, (\pm)-deplanchein, 1771
- triarylfurobenzodioxin derivs, photo-reactions, 3745
- unsymmetrical 4,4'-dialkyl-2, 2'-bipyridines, synthesis and treatment with lithium diisopropylamine, 31
- Vilsmeier-Haack reaction of N-alkyl-1,2,3,4-tetrahydro-carbazoles and application to synthesis of indole alkaloids, 2189
- Polymers**
- gymnopilin structure, 1735
- gymnoprenols, novel polyisoprene polyols, isolation and structure, 1731
- hydrophilic crosslinked carrying CO groups of 4-piperidone type, prep, 1501
- mammalian dolichols from plant polyprenols, 5103
- oligomers with 2 to 6 thiophene units, synthesis, 4043
- polyacetylene alcohol, inhibitor of cell division in fertilised sea urchin eggs, 2771
- polyamines, selective acylation of primary functions, 1031
- polycyclisations of polyenes via bromohydrins, 5515
- polyquinane synthesis, 3295
- polystyrene resin supports, loading of oligoether residues with terminal 8-quinoyl, 1661
- stereoselective synthesis of poly-prenols via aldol condensation and prep of heptaprenols, 5531
- vicinal polyols, enantio- and diastereoselective synthesis, 5869
- Porphyrins**
- DNA scission by porphyrin(Fe) intercalators, 1523
- mild and selective oxygen atom transfer, ¹⁸Bu₄NiO, with metallo-porphyrins, 3631
- monoacetyl, magnetic CD spectra, structure implications, 2433
- nonhydrolytic conversion of octaethylverdohemochrome to octaethylbiliverdin, 991
- preparation of 1,3,5,7-tetrakis-(trifluoromethyl)2,4,6,8-tetraethylporphyrin and metal complexes, 4343
- zinc tetrabenzoporphyrin and its meso-tetrapenyl and hexadecafluoro derivs, 1451
- Propellanes**
- automerisation in 7-[4.2.2]propella-2,4,7,9-tetraencarboxylates when heated at 200°, 1269
- oxidation of 7-acetyl[4.2.1]- and 7-acetyl[4.2.2]-propellanes, 3639
- reactions of 3,3,1-propellane system with OH- and NH-acids, 613
- tetrachloropropellane conversion to 8,11-dichloro[5]metacyclophane, 1817
- Prostaglandins**
- acetylenic isomers, separation as Co complexes, 2533
- biosynthesis, inhibitory effect of arabinol, 2407, 3247
- carba-prostacyclin analog, 8-step synthesis, 5487
- configuration at C-15 in prostanoids, CD spectra, 3017
- cyclic sulphonamido prostaglandin analog, synthesis, 1647
- elaboration of ω -side-chain in prostaglandins, 2505
- furan prostacyclin analogs, stable, synthesis, 47
- isolation of 20-acetoxylavulones, 4433
- new marine prostanoids from *Clavularia vividis*, 4433
- new sulphur containing carba-prostacyclin analog, 4871
- novel synthesis of (\pm)-prostaglandin D₂, 3125
- oligomerisation of 15-dehydro-prostaglandin B₁, dimer formation, implications for PGbX mixture, 991
- prostacyclin analog 9(0)-methane-

- $\Delta^6(9\alpha)$ -PGI₁, synthesis, 3493, 3497
- prostacyclin analogs, synthesis via Knoevenagel condensation, 315
- prostacyclin analogs, stable, synthesis, 1281
- prostacyclin from 5,6-dehydro-prostaglandin F_{2α} deriv, 1187
- prostanoid B-side chain precursors, 405
- prostanoid intermediates, synthesis, use of cupric bromide, 555
- prostanoids clavulone I, II and III, stereochemistry, 1549
- pyridino prostanoids, inhibitors of biosynthesis of thromboxane A₂, synthesis, 3291
- short synthesis of (-)-prostaglandin E₁, 4103
- stereoselective synthesis of 13-azaprostacyclin methyl ester, 3121
- synthesis, 12-azacarboprostacyclin analogs, 477
- synthesis, optically active 5-azaprostacyclin deriv in which enol ether is replaced by imino ether moiety, 3229
- Protecting groups**
- benzyl ether groups, removal by RuO₂ oxidation to benzoate esters, 3829
- bifunctional, for H-acidic compds using divinylloxysilane derivs, 1273
- carbonyl protected α -hydroxy-aldehydes, asymmetric synthesis, 817
- carboxamidomethyl esters as carbonyl protecting groups, 5219
- carboxyl protecting group, 9-fluorenylmethyl esters, 281
- cyanohydrins with secondary tosylates, intramolecular alkylation, 3485
- cytidine and adenosine, amino protection, use of *p*-nitrophenyl-ethoxycarbonyl group, 3583
- deblocking *p*-nitrobenzyl protected bases and phenols, using H₂O₂, 1385
- deblocking of 2,2,2-trichloro-ethylphosphate protecting group, new coreagent, 873
- deprotection of phenylthio or anilino group from thymidine 3',5'-diphosphate derivs masked with (PhS)₂P(O) and (PhS)(PhNH)P(O) groups, 5741
- diphenylcarbamoyl and propionyl groups for guanine residue, 2775
- for deoxynucleosides, N⁶(N-methyl-2-pyrrolidine amidine)deoxyadenosine, 2953
- Improved removal of chloroacetyl and bromoacetyl groups, by HDTC, 3775
- in oligonucleotide synthesis, 2,4-dinitrobenzyl for 3'-terminal phosphodiester function, 951
- kinetic acetalisation for 1,2- and 1,3-diol protection, 4037
- methoxyethoxymethyl group protection of uracil residue in oligonucleotide synthesis, 5363
- methyl thiomethyl ethers of alcohols, deprotection, new method, 4485
- oligodeoxyribonucleotides, new 3'-terminal protection system, 5321
- on hindered and sensitive alcohols, 5709
- phosphate protection, 2-chloro-4-tritylphenyl in phosphotriester approach for oligodeoxyribonucleotide synthesis, 2753
- protected 3'-deoxynucleosides from ribonucleosides, 865
- selective cleavage of β -methoxyethoxymethyl ethers using 2-chloro-1,3,2-dithioborolan, 3965
- synthesis, O⁴-protection in thymidine and uridine derivs by *p*-nitrophenylethyl group in Ag-ion catalysed alkylation, 3587
- trimethylsilyl ethyl ester as carboxyl protecting group in carbapenem systems, 139
- triprotected DL-carboxyaspatic acid deriv, synthesis of asa-containing peptides, 1671
- Purines**
- reaction of guanosine and 2'-deoxyguanosine with acrolein in DMSO, 4491
- synthesis, 2-deoxyguanosine deriv and O⁶-*p*-nitrophenylethyl guanosine, building blocks for oligonucleotide synthesis, 711
- trioctylmethylammonium salts of α -amino acids, reaction with 8-bromoadenosine, 3571
- Pyrans**
- aryl propargyl ethers, conversion to (2H)-benzopyrans, 5023
- carpenter ant secretion, synthesis of E-6(1-pentenyl)-2H-pyran-2-one, 5439
- Claisen rearrangement of 3-aryloxy-methyl-(4H)-benzopyrans, 2509
- conducting salts of (telluro-pyranyl) telluropyrans, 539
- cyclopenta[c]dihydro-3,4-pyran, ozonolysis and oxidation, 3323
- derivative of 3,4-dihydro-2-pyrone preparation, 353
- diazalkane substitution of lithiated diazomethyl compds and formation of 4-diazomethyl-4H-pyrans, 5355
- halotrimethylsilane cleavage of 2,6-dimethoxytetrahydropyrans, 1225
- hydroxypyrones, direct production from furoic acid derivs, 3133
- intramolecular cycloadditions with 2-(ω -alkenyl)-5-hydroxy-4-pyrones, 1675
- inverse electron demand, Diels-Alder reactions of 3-carbomethoxy-2-pyrones, 4939
- new synthesis, of α -pyrone, 597
- preparation of 2-alkyl-2,3-dihydro- α -pyrones from 1-methoxy-1-buten-3-yne and aliphatic aldehydes, 5303
- preparation of N-hydroxy-2-oxo-2H-1-benzopyran-3-carboxamides, use of carbon suboxide, 5013
- pyranosidic homoligation, 5819, 5823
- reaction of α -pyrones with bifunctional dienophiles, 4087
- regio and stereoselective prep of 2,6-disubstituted dihydropyran rings, 3505
- Pyrazoles**
- acetylenic 3H-pyrazole and bis 3H-pyrazole, prep and photolysis, 1775
- different 3,3-dimethyl-5-alkynyl 3H-pyrazoles, synthesis and irradiation in vinyl ether or cyclopentadiene, 1779
- photocyclisation of 5-(1-alkenyl)-1-phenylpyrazoles, 4679
- photolysis of a bi-(1-pyrazolin-4-ylidene), 4743
- pyrazole derivs from reaction of 1,4-dianion of acetophenone N-ethoxycarbonyl hydrazone with carbonyl compds, 3239
- synthesis of γ -hydroxycyclopentenones, 3443
- Pyridazines**
- isoxazole ring transformation, 5-oxidopyridazinium betaines, synthesis, 1285
- Pyridines**
- annellation of pyridine ring by *c*-position to pyridines, quinolines and quinoxalines bearing *o*-Me and carboxylic acid groups, 4607
- condensation between silyl enolates and 2-cyano-1,2,5,6-tetrahydropyridines, 1951
- formation of 6-amino-3-cyano-2(1H)pyridones from aldehyde derivs, 5073
- Friedel Craft acylation, synthesis of 3-acylpyridines, 3683
- key intermediate, 6,6-diacetyl-2,2-bipyridine, for cyclohexi-pyridine, synthesis, 2707
- photo dimerisation of N-benzyl-1,4-dihydrocinotinamide, 5399
- prep and Diels-Alder reaction of N-carbomethoxy-5-ethyl-1,2-dihydropyridine, 2927
- preparation and thermal behaviour of 1-substituted 2-dicyanomethylene-1,2-dihydropyridines and prep of 2-pyridyl malononitriles, 5805
- preparation of 2,4-disubstituted dihydropyridines in high yield, 2807
- pyridine catalysed transformation of α -azobenzyl hydroperoxide to benzoic acid, 3109
- pyridine prostenoids and 5,6,13,14-tetrahydro and 13,14-dihydro derivs, 3291
- reduction of pyridine N-oxides with hexamethyldisilane and F ion, 5337
- regioselective synthesis of 2-substituted N-methoxycarbonyl 1,2-dihydropyridines, 1801
- ring selective ipso-substitution, synthesis of 2,6-disubstituted macrocycles with oxo- and thia-bridges, 3243
- synthesis of 1,4-dihydropyridines and 2-hydroxy-1,2,3,4-tetrahydropyridines, 3579
- synthesis of 4-(2-oxoalkyl)-pyridines via 1,4-dihydropyridine derivs using silyl enol ethers and pyridinium salts, 5269
- synthesis of novel 3,5-diarylpyridones, spectral and X-ray studies, 2973
- tertiary nicotinamides, synthesis of (\pm)-sesbanin by directed metalation, 2649
- tetrahydropyridones via intramolecular ureidomercuration, 11 with sulphanyl and sulphonyl groups in 2 and 4 positions replaced by RO⁻ and RS⁻, 3243

Pyridinium salts

pyrimidinium-4-olates, cycloaddition with singlet 1O_2 to form stable peroxides, 4669

Pyrimidines

butyllithium treatment of 5-bromo 2,4-dimethoxypyrimidine, formation of uracil-5-phosphonic acid, 2571
direct formation of condensed 4-chloropyrimidines, 4611
germanium derivs of uracil and 5-fluorouracil, synthesis, 1707
irradiation of 4-pyrimidinone to 5-carboxypyrimidinium betaine, 5237
photodimerisation of 1,3-dimethylthymine in liquid crystal media, 5107
pyrimidine N-oxides, ring transformation to 1,2,4-oxadiazoles, 5763
three types of N-substituted dihydropyrimidines, synthesis and reaction with malachite green, 209

Pyrroles

acylpyrroles, active acylating agents, prep, 1569
addition of 4,6-dinitrobenzofuroxan, 2255
generation of 1-seleno-allyl cations and reactions with pyrrole, 3911
nitrosation of 2-(N,N-dimethylaminomethyl) pyrrole, 4271
pyrroles, β -substituted via N-triisopropyl-silylpyrrole, 3455
synthesis of β -trifluoromethylpyrroles, 929

Pyrrolidines

acylation of pyrrolidine-2,4-diones, 4757
isomerisation of 5-substituted pyrrolidine-2,4-diones to exocyclic $\Delta^{5,6}$ -isomers during O-acylation, 4755
pyrrolidine precursor, use of cyclobutylamine, 1883
synthesis of (+)-mesembrine and (+)-desdimethoxymesembrine from N-methyl-2-pyrrolidone, 4785
synthesis of 2-alkenylpyrrolidines in E-configuration, 3997
synthesis using β -cyanoaminosilane as azomethine ylide equivalent, 3447

Pyrrolidinium salts

reactive imidate salt, N-vinyl-2-ethoxy-pyrrolidinium tetrafluoroborate, 2091

Pyrrolines

cyclisation of dienyl-pyrrolinone to carbocyclic cytochalasans, 5535

Pyrrolizidines

isomeric pyrrolizidines, prep, 2109
synthesis of (+)-otonecine from ethyl 1-hydroxy-2,3,5,6-tetrahydro-1H-pyrrolizine-7-carboxylate, 5731

Pyrylium salts

regioselectivity of ring closure of 3-isopropyl-2,4,6-trimethylpyrylium salts, 2259

Quinazolines

quinazoline and benzoquinazoline

derivs, synthesis, 4351

Quinolines and isoquinolines

annulation of pyridine ring by C-position to pyridines, quinolines and quinoxalines bearing o-Me and carboxylic acid groups, 4607
carboethoxy quinolines, synthesis from anilino-butanoates, 517
cis-decahydroquinoline ring system, prep, 2711
decahydroquinoline ring system of poison-dart frog toxins, synthesis, 1493
new dihydroquinolines, synthesis via azides, 3609
phthalide anions, reaction with 3,4-dihydroisoquinolines, 2063
quinolines by photolysis of 4-chloro-3-(N-aryliminomethyl) (2H)benzopyrans and benzothio-pyrans, 3653
quinolones, new synthesis, 597
stereoselective synthesis of 6-hydroxy-trans-4a-phenyldecahydroisoquinoline, 1813

Quinolizidines

quinolizidines, biomimetic synthesis, 3281

Quinols

bicyclic or steroidal phenol, synthesis of p-quinol, 5779

Quinones

addition of functionalised organo lithium compds to p-benzoquinones, 131
aminonaphthoquinones and a phenothiazinquinone, O-alkylation to quinone iminium salts and formation of quinone methides, 3567
aristolindiquinone from *Aristolochia indica*, 1333
Diels-Alder between 2,6- and 2,5-dimethylbenzoquinone and sodium [E]-4,6-heptadienoate, 3807
effect of cyclobutene ring annelation on p-benzoquinone, 1727
haloquinones, addition to dienes, 2453
host defense stimulant, maesinin, isolation, structural synthesis, 3825
monoterpenyl benzoquinone, arnebinone structure, 3247
precursor, 3,6-dimethoxybenzocyclobutenone, prep, 1829

Racemisation

mechanism for α -hydroxy ketone moiety (C_β -position) of optically active anthracyclin-one derivs, 2589
of α -amino acids in presence of aldehydes, 4457

Radicals

abnormal C-N cleavage of amide group in N-substituted 4-carbamoyltetradecachlorotriphenyl ethyl radicals, 2121
aldehyde radical anions in Cannizzaro reaction of substituted benzaldehydes with NaOH, 851
alkoxy radical induced H-abstract- ion in 26-hydroxy-furostans, 7-membered cyclic transition state, 4621

anomeric effect in stabilisation of β -disubstituted radicals, 3613
benzoyl and substituted benzoyl radicals, addition to nitro-aromatic compds, 669
benzylic radicals via decarboxylation of arylacetic acids, 2219
cations generated from nitro-alkanes, 1293
closure to cleavage ratios of triplet 1,4-biradicals, effect of substituents on cycloaddition of isobutylene to 5-substituted uracils, 4055
coupling of β -acetamido radicals with α -chloro-acetonitrile, 5339, 5343
coupling of β -amino and β -acetamido radicals with electron deficient alkenes, 2051
dimer of 2-methyl-1,1-diphenylpropyl radicals and its reactivity, 3307
diphenylcarbene in polycrystalline (S)-2-BuOH, enantiomerically pure product of radical radical coupling, 3689
diradical bicyclo[2.2.1]heptane 2,6-diyl, chemical transformations, 1699
diradical cyclopentene, evidence for antisymmetrical singlet ground state, 5495
diradicals in vinylcyclopropane rearrangement of bicyclo[3.1.0]-hexane derivs, 4595
ESR of K_1 chromonyl and chromonyl radicals, 5099
formation of α,β -epoxy systems from β -peroxy carbon free radicals, 3169
formation of bi- and tricyclic alkyl radicals from alkanes, strain energies, 1161
free radical carbocyclisation, synthesis of fused and bridged ring systems, 1871
generation and ESR of 1,8-dihydroxy-9-anthron-10-yl radical, 4465
heptafulvalene trianion radical, ground state electronic structure, 1179
isonitrile-nitrile rearrangement, free radical chain mechanism, 4671
new amination process, formation of 1-amino-2-naphthol, 1601
nucleophilicity of alkyl radicals, effect of alkoxy groups, 703
oxygen trapping of 1,3-biradical intermediates in photocycloaddition of cyano enone and olefins, 2195
persistent free radical in cycloaddition of phenylallene with xanthenethione, 2299
phosphoranyl, structures, 3377
photolysis of a bi-(pyrazolin-4-ylidene) and generation of a TME biradical, 4743
production by reaction of benzoyl peroxide with N,N-dimethylaniline, 1459
spin trapping of α -azidoalkyl radicals, derived from isopropyl and benzyl azides, 3761
stabilisation energy, α -methoxyalkyl radicals, 185
substituted allylic, reversible coupling with O_2 in *l*-luc reaction of 5-methylhepta-1,3,6-triene, 97
sulphide radical cation intermediates in oxidation of

sulphides with TiO₂, 5903
 thiohydroxamic esters, radical chain reaction, 5889
 trianions of conjugated hydrocarbons, models for ESR, 3595
 trichloromethyl as chain carrier and halogen atom extraction from C Cl₄ and C Cl₃Br, synthesis of alkyl halides, 4979
 umpolung of aldehydes via radicals, CC bond formation, 3221

Rearrangements

acid catalysed of 7,8-diazatricyclo-[4.2.2.0^{2,9}]deca-3,9-diene, 2607
 acid treatment of 1-aryl-4-hydroxy-1,4-dihydroarsenin, 4079
 aldehydes to ketones in the gas phase, 4157
 allyl methyl selenides with terminal double bond, comparison with phenyl analogs, 3413
 allyl vinyl ethers to γ,σ -unsaturated aldehydes, 4423
 amino Claisen, of N-(8-keto-vinyl)isoquinuclidenes, 1021
 anaerobic, of 15-(S)-HPETE by lipoxigenase, 4921
 and formation of tricyclo-[7.1.1.0^{4,10}]undeca-2,4,6,8-tetraen-10-ol, 4261
 and transformation in chlorination of alkoxythio carbonylsulphenyl substrates, 5683
 auxiliary reagent mediated induction in aza-Claisen rearrangement, 4535
 Beckmann, of oxime sulphonates, synthesis of imidoyl iodides, 3255
 benzylic ester and/or acid evidence for SEI pathway, 3287
 benzene from 1,6-dehydrobenzvalene rearrangement, 891
 bicyclomyacin series, rearrangement, 5607
 bridgehead meso dienes rearrangements of 1,n-divinyl bicyclo-[n.m.o]alkanes, 4173
 caryophyllene to isoclovene, 3397
 chloramine, use of cyclobutylamine as pyrrolidine precursor, 1883
 Claisen, aryl propargyl ethers in poly(ethylene glycol), substituent and solvent effects, 5023
 Claisen, in conformationally rigid diosphenol allyl ether, 3
 Claisen, of 2-butenyl-2-hydroxyacetate, 729
 Claisen, oxidative of 3-aryloxy-methyl-(4H)-benzopyrans, 2509
 Cope, of functionalised acyclic 1,5-dienes, PdO₂ catalysed, 3757
 CoTPP-catalysed of 1,4-endo-peroxides, 311
 Criegee of α -alkoxy hydroperoxide, synthesis of esters and lactones, 2363
 cyclopropanone cyanohydrins, to β -peroxypropionolactones, 4699
 diarylhydroxybenzo[b]thiophenes, 3381
 diradicals in vinylcyclopropane rearrangement of bicyclo[3.1.0]-hexane derivs, 4595
 enolate Claisen of O-protected glycolates, 5177
 erythro-selectivity in [2,3]-Wittig rearrangement via Meyers' azaenolates of 5,6-dihydro-1,3-oxazine system, 513
 functionalised ketals, ketal

Claisen rearrangement, 4397
 homopropargyl, stereochemistry, in solvolysis of 1,2-dimethyl-3-pentynyl triflate, 577
 intramolecular, of sulphonamide-carboxamide, 3137
 irradiation of *cis*-8-X-mercuri-2,3,5,6-dibenzo-bicyclo[2.2.2]octa-2,5-diene-7-ol acetate and trans-diastereoisomer, 5839
 isonitrile-nitrile rearrangements, free radical chain mechanism, 4671
 methoxide catalysed, N- to O-(diphenylphosphinyl)hydroxylamine, 3115
 methylenecyclopropylcarbinols to dienes, 2347
 molecular of 5-allyl penems, 3179
 neighbouring group participation, 48-acetoxy- Δ^5 -steroids to 6 β -acetoxy- Δ^5 -steroids, 303
 octalin tosylates adsorbed on alumina, synthesis of substituted bicyclo[4.4.1]undec-1-ene, 3423
 of a pentaspiro in possible synthesis of [6.5]coronane, 5351
 of adducts of alkenes with benzeneselenenyl halides, 2689
 photochemical, in 1,3'-bicyclopropenyl series, 983
 propargylheteroatom substituted trivalent P- compds, 1643
 reactions of 1,2-dimethyl- and 1,3-dimethyl-1-cyclobutyl cations, 1147
 rearrangement of 5 α ,6 α -epoxy-3 β -methanesulphonoxy-androstan-17-one, stereochemistry of protonation at C-6, 3405
 rearrangement of substituted allene sulphoxides to α,β -unsaturated thiol esters, 4463
 reduction of 4-arylmethylene-isoxazole-5-ones to 4-arylmethyl-isoxazol-5-ones, 5893
 reversible of seco-lanosterol deriv, 617
 sila-Pummerer, of α -trimethylsilylvinyl sulphoxides, 4387
 silaoxetanes of fluorenone, benzophenone and α -pyrone, 1477
 silylene to a silaethylene via 1,2-shift of trimethylsilyl group, 2891
 silyoxybenzamides to silylated salicyclamide by O+C Si-migration, 4515
 Sommelet-Hauser, new applications, 2071
 stereospecific pinacol-type, of aryl or vinyl group in α -hydroxy methane sulphonates to yield α -aryl or α -vinyl ketones, 4997
 steroidal epoxides and opening of steroidal ketals by alkyl-lithiums, 1577
 Stevens, dihydrophenanthridinium compds, 1553
 tandem anionic [1.3]-[3.3] sigma-tropic rearrangement, synthesis of *syn*-7-benzyloxy-4-methyl-bicyclo[2.2.1]hept-5-en-2-one, 2931
 vinylsilylene, 159
 Wittig, of 2-octyl benzhydrol ether, increased pressure decreases rate but does not change stereoselectivity, 1381

Reductions

aldehydes with tetra-n-butyl-

ammonium triacetoxy-borohydride, 4287
 alkenes and alkynes with aziridinamines, 2343
 alkyl halides, AlH₃, one electron transfer agent, 2825
 alkylation of Meldrum's acids, 4951
 allylic acetate by transition metal catalysis, 3335
 aminoarenes and nitroarenes with CO and water, Pt-catalysed, 4121
 asymmetric, α,β -unsaturated ketones with chiral hydride reagents, 4123
 asymmetric, aromatic ketones with borane-amine complex modified with optically pure 2,2'-di-hydroxy-6,6'-dimethylbiphenyl, 1513
 borohydride chemoselective, between aldehyde and ketone and between aldehydes and between ketones, 5367
 by a model of NAD(P)H, arene-diazonium salt and allylic acetate, 3331, 3335
 chemoselective, carboxylic acid conversion to aldehydes, 1543
cis, of 4-(trimethylsilyl)-3-buten-2-ol with LAH, 4295
 Clemmensen, of mono- and dimethoxycyclohexa-1,4-dienes, prep of cyclopropyl ethers, 4425
 colloidal Pt as catalyst for reduction of metalloenzymes and metalloenzymes, 5005
 cyclic ketones with alkali metals and with sodium dithionite, 2487
 diaryl disulphide, reduction to arenethiols, with BNAH and 3-methylumflavin, 5231
 effect of water on catalytic activity of Mg ion reduction with NAD(P)H-model, 1263
 glycosyl halides by tributyltin deuteride, 3075
 imines by cluster [Fe₄S₄(SR)₄]²⁻, 5113
 ketones by NaBH₄ in absence of protic solvents, 1015
 new system, combination of Na₂S of NaSH with phase transfer agent in two-phase mixture, 3001
 novel reduction of α -bromo- α,β -unsaturated ketones, 399
 one electron transfer in reduction of arenediazonium salts, 3331
 organomercuric halides with LAH, mechanism, 1411
 oximes with diisobutylaluminium hydride, 4711
 polynuclear borane anions as mild reducing agents, 4955
 pure E-alkenes by reduction of α -Ph₂P=O ketones, 5293
 reduction, pyridine N-oxides with hexamethyldisilane and F ion, 5337
 reduction, sulphonate by model of NAD(P)H, 2001
 secondary amides to carbinolamine ethers and imines, 5165
 selective, ketones and carboxy esters in presence of NO₂ and CN groups, 2575
 silica gel assisted, nitrostyrenes to 2-aryl-1-nitroalkanes with NaBH₄, 227
 stereocontrolled of cyclic ketone, prep of *syn*-1,3,5,7-tetraol deriv, 3873
 stereoselective, α -substituted- β -keto sulphoxides under basic

- conditions, 503
 stereoselective, indoles with 2,3-fused bridged ring, 2469
 stereoselective, of α -hydroxy ketones, 2653
 stereoselective, of 3-oxo amides with zinc borohydride, 5385
 stereospecific, of 2-benzene-sulphonyl-1,3-dienes to conjugated Z,E dienes, 4319
 tertiary, allyl and benzyl halides, selective reduction by Zn-modified cyanoborohydride in ether, 3369
 tetrahydrocarbazoles and 2,3-dialkylindoles containing tertiary amines, 1115
 thione reduction, preparation of 5-membered heterocyclics, 339
 with NAD(P)H model bearing divalent S atom in N-alkyl substituent, 5123
- Resolution**
 chiral recognition of amino acid enantiomers, 1509
 first full of 2-methoxytricarbonyl-cyclohexadienyliron hexafluorophosphate, 2491
 kinetic, of racemic suphilimines by enantioselective reduction with arenethiols catalysed by chiral amines, 1191
 optical, of anti head-to-head coumarin dimer, 5381
 resolution and dl isomers of bis(2- and 3-chloro-9-triptycyl)methanes and ethers, 791
- Rhodium and compounds**
 rhodium(II)acetate catalysed decomposition of ethyl 2-diazo-3-oxopent-4-enoates, 5453
- Ruthenium and compounds**
 complex, catalysed dehydrogenation of unsymmetrical by substituted 1,4- and 1,5-diols, 2677
 ruthenium tetroxide removal of benzyl ether protecting groups, 3829
 trimethylphenol, Ru-catalysed oxidation with H₂O₂, 5249
- Samarium and compounds**
 samarium diiodide mediated formation of pinacols, from aldehydes or ketones, 765
- Saponins and saponinins**
 aglycone of bivittoside-C, synthesis, 2981
 asterosaponin P, from star fish, 3893
 spirostan saponinins by photolysis of 26-hydroxy-furostans, 4621
- Selenium and compounds**
 allyl methyl selenides with terminal double bond, synthesis and reactions, 3413
 carboselenylation of alkenes, 5911
 conjugated phenylseleno-lactonisation coupled with selenoxide rearrangement for functionalising dienylacetic acids, 5827
 diaryldiselenides, new synthesis, 377
 intramolecular ureidoselelenation of double bonds, 1357
 optically active selenoxides, synthesis, 3191
 oxidation of selenides and seleno oxides to alkenes using 2-sulphonyl-oxaziridines, 1213
 photodeselenative ring contraction of diselenacyclophanes, 2593
 potential of 3-chloro-2-methyl-1-selenophenylpropene, prep and use, 699
 Se-substituted allyl cations, generation in situ, 3911
 selenium reaction with 1,3-benzodithiol-2-ylidene carbenes, 2585
 stable selenoxanthenium ylides, 75
 synthesis of 3-methylselenophen and 3-methylene-2, 3-dihydro-selenophen, 2203
 vinylselenones, reaction with active methylene compds, 4429
- Semiconductors**
 photooxidation of alkanes with metal oxide semi-conductors, 5071
- Silicon and compounds**
 acid labile glycosidic bond in 2'-deoxyadenosine series, projection in N-1 oxidation, 53
 acyl chlorides and aldehydes, reaction with 2-trimethylsilylthiazole, 2901
 addition of γ -substituted allylsilanes to aldehydes in presence of TiCl₄, 2865
 allyl and propargyl silanes, intramolecular reactions with α -acyliminium ions, 1407
 allyl silanes, intramolecular, protodesilylation, 569
 allylsilane, addition to Michael acceptors, chemoselectivity, 1909, 1913
 allylsilanes from allylchlorides and silylcuprates, 5785
 allylsilanes synthesis from tertiary allylic acetates, 4151
 allylsilanes, OH-assisted isomerisations and alkylation in basic media, 4241
 allylsilanes, reaction with α -chlorosulphides containing CO group, 1711
 amides, thioamides and vinylogous amides, CSF desilylation of derived immonium salts, 4303
 aromatic heterocyclic N-oxides to α -alkylated heterocycles via allyl- or benzyl-trimethylsilane, 889
 benzylation, use of PhCH₂SiMe₃, 4217
 chlorotrimethylsilane and Ac₂O, reaction with ketones is give enol acetates, 3383
 cleavage of Si-vinyl carbon bond by ⁿBu₄ NF, 2877
 derivs of cis-4-alkylcyclohex-2-ene, stereospecific γ -anti-trifluoroacetalysis, 5789
 divinylloxysilane derivs, bi-functional protection for H-acidic compds, 1273
 ester enolates, O-silylated, alkylation, 1315
 formation of Si-A-B-Si-B-A-Si in one step and Si-A-B-Si-B'-A'-Si step by step, 4109
 hydrosilylation of (-)- β pinene, 1573
 intramolecular acylation, m-trimethylsilyl-m-alkenyl chlorides (m-4 and 5), 795
 lithiated dichloromethyltrimethylsilane and aldehydes, use in prep of 1,1-dichloroalkenes, 4727
 new synthesis of allylsilanes and vinylsilanes via PhMe₂Si-AliEt₂, 2015
 new synthesis of silanes, 4025
 optical active propargylsilane, prep and reaction with t-butyl chloride to give (S)-1,3-diphenyl-4,4-dimethyl-1,2-pentadiene, 807
 optically active cyclic allylsilanes, prep, 5661
 oxidation of 2-substituted allylsilanes to conjugated enals and synthesis of α -methylene γ - and δ -lactones, 777
 Peterson olefination of β -oxido-alkylsilane, 1997
 preparation and carbonyl addition of γ,γ -difluoroallylsilanes, 4113
 preparation of ketones with 1-phenylthio-1-trimethyl-silyl-ethene, 95
 preparation of vinyl copper reagents bearing trimethylsilyl moiety in allylic position, 5077
 reaction of trimethyl-(2-nitrovinyl)silane with organometallic compds, 2795
 reactivity umpolung of 1-alkenylsilane, 2795
 reduction of pyridine N-oxides with hexamethyldisilane and F ion, 5337
 ring expansion of silacyclopentadienyl carbene to silabenzene or 5-silafulvene, 4245
 selective and stereocontrolled umpolung of aryl and vinyl halides to trimethylsilyl derivs, 4895
 silathiacyclopropane, isolation and characterisation, 4033
 silicon directed cleavage of cyclic α -trimethylsilylketoxime acetates, 4021
 silicon substituted cyclopropyl-carbinyl trifluoroacetate solvolytic behaviour, 4931
 silyl enol ethers, methoxycarbonyl alkylation and methoxycarbonyl-idenation, 327
 silyl enolates as nucleophilic alkylating reagents, 1951
 stannic chloride mediated reaction of allylsilanes with chiral α - and β -alkoxy aldehydes, 4765
 stereochemistry of S_E2' reactions of allyl and allenylsilanes, 4153
 substituted dimesitylboryl-methanes, 637
 synthesis of α -silyloxyhydroperoxides, 1737
 synthesis of 1,1,3,4-tetramethylsilole by decomposition of 1,1,3,4-tetramethyl-3-phenyl-carbamoyl-1-silacyclopent-4-ene, 3521
 thermal generation of bis(trimethylsilyl)methylsilylene, 2791
 trimethylsilyl iodide, vinyl sulphides from sulphoxides, 2619
 trisilanes, Si-Si bonds, insertion of alkanal CO and 1,3-diene units, 4109
 vinyl- and alkynylsilanes, cyclo-addition, of dichloroacetene, 23
 vinylsilanes from alkynylsilanes via hydromagnesiation, 1041
 vinylsilylene rearrangement, 159
 Zn-trimethylchlorosilane, conversion of ketones having δ,ϵ,π -functions to cyclo-

- pentanols, 2821
- Solvent effects**
 can ground state destabilisation of α -nucleophile induce and α -effect, 4777
 in Claisen rearrangement of aryl propargyl ethers in poly(ethylene glycol), 5023
 in conformational equilibrium of phenylcyclohexane, 1855
 on chemiluminescence of tetraaryl- $\Delta^2,2'$ -bi-imidazolines, 2307
 photodimerisation of 1,3-dimethylthymine in liquid crystal media, 5107
 photolysis of α -diazoamides, OH and CH insertion products, 233
 solvent sorting by solute molecules, pressure-induced changes, 2427
- Spiro compounds**
 dithiaspirane disulphoxides, ultra long-range through-bond interactions, PE spectra, 2957
 formation via thermal reactions of cyclic sulphur ylides, in ethanol, 3733
 functionalised 1,7-dioxaspiro[5.5]undecan-4-ones, synthesis, 427
 intramolecular carbenoid addition route to spiro-cyclopropaneindol-7-one ring system of antibiotic CC-1065, 4773
 intramolecular Diels-Alder of methyl 5(spiro[2.4]hepta-4,6-diene-1-yl)2-pentanoates, effect of sidechain substituents, 677
 new synthesis of 1,7-dioxaspiro[5.5]undecane, 3905
 spiroannulation via gem-dihalocyclopropanes and cyclopropane species, 5767
 substituted spiroketals synthesis, 4551
 synthesis of spiro[3.4]octa-5,7-diene, 2731
- Stereochemistry**
 absolute, of (-)-vincatine, 2497
 alkaloid *epi*-lupinine, 261
 allyl and allenylsilanes, S_E2' reactions, 4153
 allylic C-O and C-C bond formation in decarboxylation of allylic carbonates and acetoacetates, 411
 and configuration, murolene dhydrochloride, 1445
 and epimerisation of phenylcamphoric acid, 2441
 anti stereochemistry in S_E' reactions, asymmetric hydro-silylation of cyclic dienes, 5661
 carbonation of carbanions α -to chiral sulphoxide, 755
cis-olefins from Horner-Wittig Reaction, origin and optimisation of stereochemistry, 3931
 clavulone I, II and III, 1549
 clerodin and caryoptin, stereochemistry and conformations, CD and ORD spectra, 5631
 compds related to torus, enantiomerism, 3187
 dibenzylidene-ethylene dianion, 3985
 diterpene (\pm)-eremolactone and C-4 epimer, stereochemistry at C4, 5127
 dithiopropanoates, *cis* selectivity of kinetic deprotonation, 3617
 electrocyclic ring closure of [2.2.6]paracyclophanepentaene, structure and dynamic stereochemistry of product, 5407
 epoxidation of norbornene and 3-carene with Na OCl/Mn(TPP)OHC, arguments against chlorohydrin route, 3621
 generation of 1-seleno-allyl cations and reactions with pyrrole and furan, 3911
 homoallylic alcohols, from reaction of benzaldehyde with 3-phenylpropen-1-yl magnesium chloride, 1427
 homopropargyl rearrangement in solvolysis of 1,2-dimethyl-3-pentynyl triflate, 577
 nucleophilic displacement of P-Cl bonds with different nucleophiles in 5-membered, 6-membered and acyclic chlorophosphates, 4323
 osmium tetroxide oxidation of allylic alcohol systems, empirical rule and examples, 3943, 3947
 preparation of 3,4-dihydroxy- γ -lactones with predictable stereochemistry, 3951
 ptaquiloside, a norsesquiterpene glucoside from bracken, stereochemistry, 5371
 reduction of cyclic ketones with alkali metals and with sodium dithionite, 2487
 reduction of indoles with 2,3-fused bridged ring, 2469
 reduction of tetrahydrocarbazoles and 2,3-dialkyl-indoles containing tertiary amines, 1115
 related to *trans*-clerodane and congeners, 3385
 remote stereochemical relationships, control by diastereotopic hydroxy-methyl groups in a spiroketalisation, conversion of talaromycin A into talaromycin B, 4781
 revised of ptericidin A, 5485
 synthesis, isolation and characterisation of *cis*- and *trans*-2,7-dimethyl-3,5-cycloheptadione, 2627
 thioallene formation with phenylthiocopper phosphine complexes dependent on leaving group, 4797
 vinyl cuprate to carbohydrate derived enones and $\alpha,8$ -unsaturated esters, stereochemistry, 2231
 Wittig reaction of aldehydes with oxida phosphonium ylides, 2477
- Steric effects**
 in carbene cycloadditions, 881
- Steroids**
 absolute configuration of 24,26-cyclocholesterol by bromimetic conversion to 27-norergosterenes, 3461
 and tricothecanes, *syn*-7-benzyloxy-4-methylbicyclo[2.2.1]hept-5-en-2-one as intermediate for synthesis, 2931
 application of dithianylidene anions to synthesis of *de*-AB-8-carbamethoxycholestan-9-one, 1859
 axinysasterol, 25-methyl-fucoesterol and 24-ethyl-24-methylcholesterol synthesis and structure, 665
 bicyclic or steroidal phenol, synthesis of *p*-quinol, 5779
 chiral precursors for synthesis, construction, 3819
 cholesterol, screening of endovesicular reactions, 3961
 compactin, sequential total synthesis, 3687
 degradation of cholesterol, β -sitosterol and campesterol to 4-androsten-3,17-dione, 3199
 directed chlorination of three steroids by one template group if attached to all three as silyl triether, 5039
 from stigmasterol, synthesis of 29-fluorophytosterol, 2461
 hexahydroaphthalene moiety of (+)-mevinolin, synthesis, 3701
 intermediate in corticosteroid synthesis, 3145
 isolation of ergosta-5,7-diene-3 β ,23 ϵ -diol from yeast, 4729
 new route to 4-aza steroids, 5017
 new synthesis of 11-keto steroids, 3145
 optically active, synthesis, (3aS)-1,3a-dimethyl-2,3,3a,5,6,7-hexahydroindeno-4(5H)-one, as intermediate, 3175
 papakusterol with cyclopropyl side chain, isolation, structure and partial synthesis, 277
 plant growth promoting dolicholide and 28-norbrassinolide, stereoselective synthesis, 773
 prednisolone, 11 α -formylmethyl deriv, conversion to 1,11 α -ethano corticosteroids, 5603
 preparation of 14-*epi*-androsterone and odour evaluation of 14 β -epimer, 4589
 prevention by 11 β -aryl substituents, transformation of 5(10)-estrene derivs to 4-estrene analogs, 5205
 rearrangement of 5,6 α -epoxycholestan-3-one to ketalised Δ^4 -6 α -ol, 1577
 rearrangement, 4 β -acetoxy- Δ^3 -steroids to 6 β -acetoxy- Δ^4 -steroids, 303
 rearrangement of 5 $\alpha,6\alpha$ -epoxy-3 β -methanesulphonyloxy-androstan-17-one, stereochemistry of protonation at C-6, 3405
 remote substituent effect on regioselectivity in oxidation of 5 α -cholestan-6-one derivs, 917
 reversible rearrangement of a sec-lanosterol deriv, 617
 steroidal glycoside asterosaponin P, isolation and structure, 3893
 synthesis of 1,2,4-triazoline-3,5-dione derivs of ergosterol, and new reconversion to ergosterol, 2995
 synthesis of 1,2,4-triazoline-3,5-dione derivs of ergosterol, 2995
 synthesis of 22,25-oxido-8-cholesteryl acetate, 4223
 synthesis of 3 β -hydroxy-9(11)-enlanost-18,20-lactone, 2981
 synthesis of B-nor-6,12-bisthaestra-1,3-5(10),8,14-pentaen-17-one, 5403
 synthesis using organoiron complex, 5781
 total synthesis of *p*-tolylsulphonylmethyl-8-des-AB-cholestene-8, 3083
 typhasterol, plant growth hormone, structure, 3859

Strain

- in 3-isopropyl-2,4,6-trimethylpyrylium salts, interaction of isopropyl group and Me or OH, 2259
 intramolecular competition as probe for comparing radical strain energies, 1161
 three glycol ethers, free enthalpies of thermal decomp, 185

Substituent effects

- alkoxy groups on nucleophilicity of alkyl radicals, 703
 barrier to rotation in styrenes, 1077
 carbonyl substituents, effect on selectivity ratios in photolysis of α -diazo amides, 233
 Cookson's pentacyclic cage ketone derivs, effect of 1,7-dimethoxy groups on [2+2]cycloreversion, 5645
 cyclisation of *n*-methylene dicinnamates, MeO substituent effect and topotactic assistance by methylene chain, 4237
 directive effects on electron transfer reduction of *N*-methylphthalimide by 2,3-dimethyl-2-butene, 1879
 ethoxycarbonyl group, effect on 1,4-biradical cyclisation in photo-reaction of benzoylvalerates, 1995
 in Claisen rearrangement of aryl propargyl ethers in poly(ethylene glycol), 5023
 in photochemistry of 1,1-diaryl-cyclopropanes, 41
 in photochemistry of triarylfurobenzodioxin derivs, 3745
 induced thermal 1,3-dipole formation in imines by activation of CH proton, 4363
 intramolecular Diels-Alder of methyl 5(spiro[2.4]hepta-4,6-diene-1-yl)2-pentanoates, effect of sidechain substituents, 677
 irradiation of 5,6-benzo-2-azabarelenes, effect of ratios and structural features of substituents on di-*n*-methane product structure, 2271
 Me group on α : γ ratio in phenylthiomethylation of silyl dienol ethers, 2913
 MeO effect and topotactic assistance by methylene chain of *n*-methylene dicinnamates on photocyclisation, 4237
 MeO effect on 1,2-H shift in chlorocarbene, 5713
N-substituent on olefin-keteneiminium salt reaction, 2251
 on acetylation of 2-phenylethyl tosylate, 2177
 on chemiluminescence of tetraaryl- $\Delta^2,2'$ -bi-imidazolines, 2307
 on cycloaddition of mesoionic oxazolones to alkenes, 369
 on photoconversion of 1,1-diaryl-cyclopropanes to 1,1-diaryl-propenes and 1-aryllindanes, 41
 on photocycloaddition regioselectivity and on 1,4-biradical closure-to-cleavage ratios, isobutylene to 5-substituted uracils, 4055
 on products and distribution in acid decomp of 7-substituted 3-diazo-2-norbornanones, 2419, 2423
 on thermolysis of dicyclopropyl

ketimines, 3409

- participation of geminal dinitro group in base catalysed epimerisation of alcohol, 3907
 phenyl group on lithiation of 1,3-ditelluroles, 237
 polar influence on reactivity, empirical quantification to proton affinity of amines, 2541
 polarisability, new empirical models and application to stabilisation effects in positively charged species, 2537
 prevention by 11 β -aryl substituents, transformation of 5(10)-estrene derivs to 4-estrene analogs, 5205
 regioselective oxidation of 5 α -cholestan-6-one derivs, remote substituent effect, 917
 remote, control of Diels-Alder addition regioselectivity in synthesis of anthracycline precursors, 1497
 remote, effect on reactivity of cyclohexene double bond, 5133
 remote, on stereoreactivity, cycloaddition of diazoalkanes to 7-halonorbornadienes, 1387, 1391
 reversed, in 5-endo-trig and 6-endo-trig reactions, 2851
 substituents attached to double bond, allylic H-abstraction from 1-X-substituted cyclohexenes, 5019
 substituted ethenes and propenes, effect on ^{13}C -SCS, 5265
 thermodynamic Me, in deazetation of 6,6,7,7-tetrafluoro-2,3-diazabicyclo[3.2.0]hept-2-ene, 4047

Substitution reactions

- acyclic ketimines, electrophilic substitution, 3559
 at position 2 without ring opening and at position 6 with ring opening of 5-acetyl-2-benzylthio-6H,1,3-thiazine, 3713
 electrophilic, β -substituted pyrroles via *N*-triisopropylsilylpyrrole, 3455
 electrophilic, 2,4-bisdimethylamino-thiazoles and -imidazoles, 3563
 enantioselective, between α -monosubstituted amino acids and (S,S,S) or (R,R,R)-2-hydroxypinan-3-one as chiral agent, 3721
 functionalised nitroalkanes and chloronitroalkanes, substrates for $\text{S}_{\text{RN}}1$ reactions, 1787
 homolytic, of *N*(6)-benzoyl-adenosines, 799
 of fused chlorocyclobutanones, effect of conformation and stereochemistry, 1135
 piperidine with 1-bromo-1-cyclopropylalkanes, 5031
 radical nucleophilic reactions of α -nitro-thiocyanates, 2517
 substitution by H_2O and NHMe_2 at position 2 of 5-acetyl-2-benzylthio-6H-1,3-thiazine without ring opening, 3713
 threefold, benzene trioxide with selected carbanions, 4099

Sulphenic acid and derivs

- carbosulphenylation of alkenes, 1315, 5911
 chlorination of alkoxythiocarbonyl-sulphenyl substrates, 5683
 preparation and reactivity of 1,3,6-

trimethylallumazine-7-sulphenic acid, 5047

Sulphides disulphides and polysulphides

- allylsilanes, reaction with α -chlorosulphides containing CO group, 1711
cis-disulphides, PE-spectrum of 6,7-dithiabicyclo[3.2.1]octane, 319
 diaryl disulphide, reduction to arenethiols, 5231
 dimethyl sulphide ditriflate, new reagent, conversion amino heterocycles to iminosulphuranes, 1011
 diphenyl disulphide, reaction with 1,8-dehydronaphthalene, 821
 disulphides designed to inhibit 3-hydroxy-3-methylglutaryl-CoA, 3769
 lithiated benzylic or allylic 3-methyl-(Z),3-butadienyl sulphides, conversion to *cis*-disubstituted cyclopropanes, 2387
 imazinesulphenates by hydrolysis of S-S bond in heterocyclic disulphides, 5047
 phenyl vinyl sulphides from TiCl₄-Zn and substituted α -halo-sulphoxides, 531
 preparation and characterisation of sterically protected primary phosphine sulphide and oxide, 4227
 propargyl and allenic sulphides with inversion of configuration from chiral secondary propargylic triplate and phenylthiocopper phosphine complexes, 4797
 sulphides, sodium perborate oxidation to sulphoxides or sulphones, 1505
 symmetrical disulphides by coupling of thiols using clay-supported nitrosation, 3103
 terminal phenyl vinyl sulphides, hydrolysis, convenient procedure, 535
 titanium dioxide oxidation of sulphides, 5963
 vinyl sulphides from sulphoxides, 2619

Sulphines

- bis-trifluoromethyl-sulphine, synthesis and properties, 2141

Sulphinic acid and derivs

- sulphinic acid, reductive acetylation, synthesis of 2-acetylthio-4-oxoazetidines, 1429
 thiosulphinic acid esters using organotin precursors, 5173

Sulphonamides

- intramolecular rearrangement of α -carboxy-*N,N*-dialkylbenzene-sulphonamides to *o*-chloro-sulphonyl-*N,N*-dialkylbenzamides, 3137

Sulphones

- allyl dienyl sulphones, Michael additions of ethanol and ketones, 1783
 carboxylic ester to carboxaldehyde using methylthiomethyl *p*-tolyl sulphone, 5761
 dibenzothioephene sulphone, reaction with alkoxide, C-S bond cleavage, 3543
 hydrogenolysis of vinylic sulphones to olefins, 4311

new synthesis of γ -hydroxyvinylstannanes and silanes using β -stannylvinyl and β -silylvinyl sulphones, 4025

Sulphonic acid and derivs

basic treatment of allylic 1,1-disulphones to 1-arenesulphonyl 1,3-dienes, 4315
 enol triflates, coupling with lithium diorganocuprates, formation of olefins, 979
 methane sulphonates of 1-O-benzoyl-1,2-, -1,3-, and -1,4-glycols, nucleophilic displacement, 4233
 reduction of 2-benzenesulphonyl-1,3-dienes to conjugated Z,E -dienes, 4319
 reduction of sulphonate by model of NAD(P)H, 2001
 stereospecific pinacol-type, of aryl or vinyl group in α -hydroxy methane sulphonates to yield α -aryl or α -vinyl ketones, 4997
 sulphonylureas and carboxysulphamides, synthesis, 3091
 synthetic application of phenylthio- and phenylsulphonylmethyl ethers to aldehydes methylals, carboxylic acids and enol or dienol ethers, 4993
 trifluoromethanesulphonic acid, reaction with triphenylmethyl cation, 71

Sulphonium salts

decelerated Me transfer from δ -ammoniomethylsulphurane compound with corresponding methylsulphonium salts, 4859
 functionalised by oxygenated groups, prep elimination of sulphonium moiety and formation of Satysev or Hofmann olefins, 4331
 kinetic versus thermodynamic acidity of α -sulphonium protons, 839

Sulphoxides

alkenyl sulphoxides as prostanoid β -side chain precursor, 405
 allene sulphoxides, substituted, new transformations, 4463
 carbanions adjacent to sulphoxide, sulphone and sulphonium centres, theoretical reexamination, 4071
 carbonyl protected α -hydroxyaldehydes through $LiAlH_4$, reduction of β -oxosulphoxides, 817
 dithiaspirane disulphoxides, ultra long-range through-bond interactions, PE spectra, 2957
 lithio fluoromethyl phenyl sulphoxide, alkylation, 725
 sila-Pummerer rearrangements of α -trimethylsilylvinyl sulphoxides, 4387
 stereochemistry of carbonation, carbanions α -to chiral sulphoxide, 755
 stereoselective reduction, α -substituted β -ketosulphoxides, 503
 substituted α -halosulphoxides, eliminative deoxygenation, 531
 synthetic applications of dichloromethyl phenyl sulphoxide, 527
 terpenoid sulphoxides and sulphides in petroleum, 651

Sulphur compounds

alkoxydichloro methyl disulphanyl products, prep, 5683
 first diarsathiran synthesis, 2769
 iminosulphuranes from amino heterocycles, 1011
 new sulphur containing carbaprostacyclin analog, 4871
 novel heterocycle phospharsathiran, prep, 3625
 optically active S-methyl-S-p-tolyl- and S-ethyl-S-p-tolyl-N-tosylsulphilimine by reduction of racemic mixture with arene-thiols catalysed by chiral amines, 1191
 phase transfer catalysed desulphurisations, 5329
 reaction of N-acylsulphilimines with diphenyl ketone, 2811
 reduction with NAD(P)H model bearing divalent S atom in N-alkyl substituent, 5123
 substituted dimesitylborylmethanes, 637
 sulphur, reaction with 1,3-benzodithiol-2-ylidene carbenes, 2585
 sulphuration of 2,3-di-t-butylthiofumarates with P_2S_5 to 3H,6H-1,2-dithiolo[4,3-c]-dithiol-3,6-dithione, 3577

Sultams

substituted in 2- and 3-position including bicyclic β -sultams, synthesis and properties, 2131

Tannins

atropisomerism in new condensed tannins based on biphenyl and o -terphenyl, 4627
 condensed tannins based on stilbene, 4147

Tautomerism

hydroxyketone-enediol, enantioselectivity, 4209

Techniques

enantioselective gas chromatography and GC/MS analysis for structures of photocyclodimers of 2-cycloalkenones, 5851
 improved syringe technique for preparation of oligonucleotides with defined sequence, 4963

Tellurium and compounds

alkyl phenyl tellurides and telluroxides, oxidation, replacement of Te by OMe, ring contraction and phenyl migration, 4347
 dialkyl telluronium allylide for synthesis of $\alpha,8$ -unsaturated epoxides, 5109
 dialkyltelluronium carbethoxymethylide in synthesis of $\alpha,8$ -unsaturated carboxylic esters, 2599
 lithiation of 1,3-ditelluroles, 237
 synthesis of 1,3-benzotellurazole and derivs, 5873
 synthesis of 3-methylene-2,3-dehydrotellurophen, 2203

Terpenoids

acyclic triterpenes, botryococenes, isolation and structure, 4013
 alloisolongifolene, acid catalysed isomer of longifolene, 2411
 beyergibberellin A₉, chemical and microbiological synthesis, 1945

bicyclic triterpenoids, poly-podatetraenes, structures, 5733
 brianthein Z, new polyfunctional diterpene, 691
 brominated sesquiterpenes from *Aplysia dactylomela*, 847
 carotene sesquiterpene, synthesis of *dl*-asperterric acid, 5241
 citral synthesis from diprenyl ether, 5737
 dihydrojasnone, synthesis, 439
 diterpene (\pm)-eremolactone and C-4 epimer, synthesis, 5127
 diterpene (\pm)-isoeeremolactone, synthesis, 4487
 diterpene 7,8-epoxy-4-basmen-6-one, novel skeleton, 843
 diterpene, epoxydictymene, structure, 4341
 diterpenoid, anadensin, from *Anastrepta orcadensis*, 3787
 diterpenoids, *trans*-clerodane and congeners, synthesis and stereochemistry, 3385
 euphohelioscopins A and B, structure and conformation, 2577
 functionalised isoprenes with terminal alkoxy group, regioselective Diels-Alder reaction with unsymmetric dienophiles, 1171
 furanoid sesquiterpene penlanfuran from marine sponge, 3897
 gymnocolin, new *cis*-clerodane diterpenoid, 115
 iridoid monoterpene ($-$)-sarracenin, enantioselective synthesis, 401
 isocaryophyllene, synthesis by Ti-induced keto ester cyclisation, 1885
 isogermacone, photolysis and pyrolysis, 947
 isovelleral configuration and sesquiterpenes isolated from *Lactarius* sp, 4631
 meroterpenoid, paraherquonin from *Penicillium paraherquei*, 3113
 monoterpene precursor of protuberberine alkaloid, 291
 myrcene and β -farnesene, synthesis, 1905
 new diterpene pachylactone, structure and conformation, 5117
 new furanosesquiterpene ketones from *Myoporium montanum*, 1749
 new gualanolide from *Centaurea clementei*, 1641
 new humulene derivs, (2E,6E,9E)- and (2Z,6E,9E)-cycloundecatrienones, prep, 4695
 new polyoxygenated lanostane acids, isolation and cytotoxic activity, 1081
 new quinone methides from seed of *Chaenactis obtusa*, 1535
 new synthesis of (\pm)cedrene using sequential inter- and intramolecular Michael reactions, 2125
 new triterpene, 3 β -acetyl-2 α (3'-hydroxy-3'-methyl)glutarylcrustulinol, 1655
 norsesquiterpene ($-$)-khusimone, enantioselective synthesis, 4975
 norsesquiterpenes, ptaquiloside glycoside from bracken, 4117
 nortriterpene, paffic acid, 1057
 pentacyclic velutinal esters from *Lacarius* species, conversion to free alcohol, 1415
 ptaquiloside, a norsesquiterpene glucoside from bracken, stereochemistry, 5371
 rosane diterpenes, epoxicorcovadin

- and epoxivelozin, isolation and structures, 5043
- schisanlactone A, new triterpenoid from *Schisandra* sp, structure, 2351
- schisanlactone B, new triterpenoid from *Schisandra* sp, structure, 2355
- selective cyclopropane cleavage, synthesis of sinularene, longifolene and sativene, 681
- semiterpenoid esters identification, 5811
- sesquiterpene furan alcohol with lactarane skeleton, 4631
- sesquiterpene germacrone, total synthesis, 3489
- sesquiterpene lactones, transformation of (-)-artemisin to (+)-metitensin, 1741
- sesquiterpenes, dl-coriolin synthesis, 4267
- sesquiterpenes, (±)-isoclovene, total synthesis, 5669
- sesquiterpenes, (±)-acoragermacrone and (±)-mukulol total synthesis, 3485
- sesquiterpenes, agelasidine A from sea sponge, 4105
- sesquiterpenes, synthesis of (±)-coriolin, 5325
- sesquiterpenoid 3-hydroxysolavetivone oxidation and rearrangement to 2-keto- α -cyperone, 3267
- sesquiterpenoid, ptychanolide, synthesis of stereoisomer, 4177
- stereostructure of (-)-murolene dihydrochloride, 1445
- structural revision of (±)-isosesquicarene, 4445
- structure revision of alloisolongifolene, 4739
- synthesis of (±)-boschnialactone, (±)-teucrium-lactone and (±)-loganin, 5797
- synthesis of bridged tetracyclic systems related to diterpenes, 3921
- synthesis using organoiron complex, 5781
- synthesis, Michael additions to conjugated dienyl sulphones, 1783
- synthesis, optically active hydrindenone as synthon, 3175
- terpenoid sulphoxides and sulphides in petroleum, 651
- terpenylation of olivetol by trans-2- and 3-carene epoxides, formation of tetrahydrocannabinols, 3129
- tetracyclic diterpenes, intermediates for synthesis, 5919
- tetracyclic sesquiterpene, (±)-cycloseyhellene synthesis, 937
- total synthesis of (+)-hanegokedial sesquiterpene, 1867
- treatment of (Z,E,E)-humulene with Hg-salts, 2869
- tricyclopentanoid sesquiterpene, (±)-silphinene synthesis, 83
- trioxxygenated diterpene from *Aplysia dactylorella*, 1075
- trisubstituted tetrahydrofuran davanone, stereocontrolled synthesis, 1365
- triterpene quinone methide, netzahualcoyone, X-ray analysis, 3033
- triterpene siphonellinol, structure, 3673
- triterpene, 23-oxo-isopristimerin, isolation and structure, 2799
- triterpene, pisolactone, isolation and structure, 2205
- triterpenes, structures of new phenolic 24-nor-D:A-friedoleananes related to zeylasterone and partial synthesis of trimethylzeylasterone, 2025
- Tetrazines**
- bifunctional cyclopropene and 1,2,4,5,-tetrazines, mechanism of reaction, 1485
- dimethyl 1,2,4,5-tetrazine-3,6-dicarboxylate with aryl thiomidates, prep of 1,2,4-triazine, 4511
- improved activators of deoxy-nucleoside phosphoramidites, in deoxyoligonucleotide synthesis, 3171
- reaction of 1,2,4,5-tetrazines with bifunctional dienophiles, 4087
- Tetrazoles**
- enhanced acidity of 5-(p-nitrophenyl)tetrazole as activator in deoxoligonucleotide synthesis, 3171
- Thallium and compounds**
- oxythallation of flavenes, prep of flavones, 4455
- Thermochemistry**
- reactions of cyclic sulphur ylides, solvent uptake and spiro compd formation, 3733
- thermal decomp of cis- and trans-diphenylaziridinamine, 2339
- thermolysis of cis-tris-[2.2.2]- δ -homobenzene, 2143
- thermolysis of 1,3-dithio-2-yl azides and properties of resulting 1,4,2-dithiazines, 3729
- volume profile for thermolysis of a β -lactone, 2897
- Thia compounds**
- approaches to 12-thiasteroids, 5403
- donor molecule for highly conductive complexes, 1,4,9,10-tetrathiaanthracene, 2401
- preparation, (S)-1-(1,3-dithian-2-yl)-2-hydroxypropane and conversion to (S,S)-(+)-grahamimycin A₁, 287
- silathiacyclopropane, isolation and characterisation, 4033
- thermal reaction of 1-cyano-2-methyl-3, 4-dihydro-2-thianaphthalene in toluene and in ethanol, 3733
- Thiazines**
- dihydrothiazine deriv, rearrangement of penicillin G β -sulphoxide, 201
- erythroselective aldol condensation of 4-acyl-2,3-dihydro-4H-1,4-benzothiazine and 10-acylphenothiazine, 3883
- substitution at position 2 without ring opening and at position 6 with ring opening of 5-acetyl-2-benzylthio-6H-1,3-thiazine, 3713
- substitution by H₂O and NMe₂ at position 2 of 5-acetyl-2-benzylthio-6H-1,3-thiazine without ring opening, 3713
- synthesis of 2-chloromethyl-2,3-dihydro-benzo-1,4-thiazines, 3203
- Thiazoles**
- activation of 3-thiazolines with BF₃ and reaction with organometallic reagents, 4503, 4507
- benzothiazole, H-substitution with carbanions of chloromethyl sulphonyl compds, 3277
- electrophiles and oxidants, reaction with 2,4-bisdimethylaminothiazoles, 3563
- functionalised thiazolidines, prep, 4503
- new thiazol-2-yl derivs, synthesis, 2901
- preparation of thiazole-4-carboxylates, 2501
- reaction of primary amines with vic-halo-thiocyanato-alkenes to afford 2-amino-1,3-thiazoles, 5085
- Thiepins**
- synthesis of 5-chloro- and 5-bromo-5,11-epoxy-6,11-dihydrodibenzo[b,e]thiepins, covalency of S-halogen bond, 4337
- Thiiranes**
- reduction to alkenes and alkanes, 1657
- ring opening with group B organometallics, 2311
- Thio compounds**
- activity scale of dipolarophiles vs thiobenzophenone S-methylide, 4185
- alkylation of α -silylated enolates of ketones by chloro, α -(phenylthio or arylthio) ketone to thio substituted 1,4-diketones, 2095
- chiral synthesis of 2-thioxopenam, 3179
- conversion, 1-t-butylthio-1(Z)-alken-3-ols to acylation equivalent, 4825, 4829
- conversion, 5-membered 1,3-disubstituted heterocyclic thiones to saturated derivs, 339
- cyclisations onto aromatic systems using 1,3-benzodithiolium ions, 2939
- diphenyl thioacetals and thioesters by hydrolysis of terminal phenyl vinyl sulphides, 535
- dithiopropanoates, cis selectivity of kinetic deprotonation, 3617
- leaving group dependent stereochemistry of thioallene formation with phenylthiocopper phosphine complexes, 4797
- method of β -arylthioalkylation of carbonyl compds, 961
- penicillin derived S-compds, formation of 4-acyldithioazetidins-2-ones, 1627
- preparation of 1,acyl-1-[p-tolyl (or methyl)thio]cyclobutanes, and ring expansion to cyclopentanes, 79
- preparation of 3-methylene-2-azetidinedithiones, 3725
- preparation of erthro (R*R*) or threo (R*S*) 8-hydroxythioamides, 4001
- reaction of (1,3-dithiolidene)phosphoranes with 2-formylmethylene-1,3-dithioles, 3469
- silyl dienol ethers, α : γ ratios in phenylthiomethylation, 2913
- stereospecific conversion of P-S to P-¹⁸O involving displacement of

- thioalkyl by OH group, 5677
 synthesis and properties of 1,4-butenediyldiene-2,2'-bis(1,3-dithiole), 3473
 thermal cycloadditions of aromatic thiones with cumulated systems, 1101
 thioacetalisation, titanium chloride reagent, 1289
 thioamides, conversion to amides, 1323
 thiobenzophenone S-methylide, new reactions, 4181
 thiobenzophenone S-methylide, reaction with pairs of dipolarophiles, selectivity for nucleophilic 1,3-dipole, 4185
 thiocarbonyl transfer reagents in prep of thioamides from aldonitrone, 4927
 thiohydroxamic esters, radical chain reaction, 5889
 thioketalisation, Mg and Zn catalysed, 169
 thiolactams in alkaloid synthesis, 829
 thiones, synthesis of β -aminovinyl-arylthione S-imides and S-oxides, 4435
 thiopeptide linkages from oligopeptides with new thionation reagents, 3815
 unsaturated ketones and thioenolates, C-versus S-1,4-addition of disubstituted dithioesters thioenolates, 4203
- Thiocyanates**
 aqueous thiocyanate ion, reaction with alkyl halides in stirred, unstirred and sonicated solns, 1585
 cycloaddition of nitrile oxides to arylthiocyanates, 5141
 radical nucleophilic reactions of α -nitro-thiocyanates, 2517
- Thiols**
 acetylenic ketones from S-ethyl carbothioates and 1-alkynyl methylsilanes, 5131
 coupling into disulphides via thionitrite intermediates using clay support nitrosation, 3103
 debromination of 1,2-dibromides with poly(styrylmethylthiol), 3913
 erythro aldol condensation with quaternary ammonium enethiolates and threo aldol selectivity mediated with Lewis acid, 4001
 mercaptans, oxidation to disulphides with chlorotrimethylsilane-chromium, 4367
 preparation of 2-thio- and 2-seleno-1,3-benzodithioles, 2585
 regioselective *trans* addition, 2-methyl-2-propanethiol to primary, *sec* and *tert* 1-alkyn-ols, 61
 regioselective route to β -amino and β -cyanide thiols, 2311
 regioselective route to β -disfunctional mercapto compds, 2311
 synthesis, 19 \rightarrow 10 thiololactone analog of gibberellin A₁, 351
- Thiophenes**
 alpha thiophene oligomers, synthesis via organoboranes, 4043
 extrusion of SO₂ from 2-alkylidene-2,5-dihydrothiophene 1,1-dioxides, 4691
 synthesis and rearrangement of diaryl hydroxybenzo[b] thiophenes, new synthesis of 2,3-diarylbenzo[b]thiophenes, 3381
 synthesis of 5-(2,3-diphenylcyclopropenyldiene)-2(5H)-thiophene, 205
 tetrahydrothiophenes by cycloadditions of 2-(*t*-butylthio)acrylonitrile and dienophiles, 885
 thiophenes, di- and tri-substituted, synthesis from thiazolidines, 4507
- Thromboxanes**
 potent inhibitors of thromboxane A₂ biosynthesis, synthesis, 3291
- Tin and compounds**
 acid chlorides, vinylation with organotin compds to α -oxygenated enones, 2361
 coupling of 3-tributylstannylacrylate with 4-*t*-butylidiphenylsiloxy-pentanoyl chloride to give 7-hydroxy-4-oxo-2-octenoic acid, 4283
 derivs of *cis*-4-alkylcyclohex-2-ene, stereospecific γ -anti-trifluoroacetylation, 5789
 dibutylstannylene complexes, mono-*O*-alkylation of disaccharide glycosides, 2383
 erythro selective aldol reaction of α -trichlorostannyl ketone, 3347
 new synthesis of γ -hydroxyvinylstannanes and silanes, 4025
 organotin thiolates, reaction with sulphonyl chlorides, 5173
 reagent from 1-chloro-3-iodoprop-1-ene and SnCl₂, reaction with aldehydes, 4009
 reduction of glycosyl halides by tributyltin deuteride, 3075
 ring opening with Me₃SnNR₂ affording thiols, 2311
 stannylation of 1-bromo- and 1-chloro-4-iodo-4-iodo[2.2.2]-octane, abnormal leaving group mobility (B:I:Cl), 5901
 substituted dimesitylboryl-methanes, 637
 syn stereospecificity and SO₂ insertion into 4- and 6-alkylcyclohex-2-enyl trimethylstannanes, 5793
 Zn catalysed cross coupling of allyl halides with allyltin, 1905
- Titanium and compounds**
 diversified bis-functionalisation of γ -lactols, Ti-mediated, 3555
 preparation of titanacyclobutanes, 3935
 synthesis of optically active organometallic compds, 3087
 titanium chloride reagent for thioacetalisation, 1289
 titanium tetrachloride promoted coupling of vinylketene silyl acetals, 785
 trichlorotitanium enolates, formation and characterisation, 3341
 trichlorotitanium enolates, aldol reaction, revaluation of transition state, 3343
- Topology**
 cyclic hydrocarbons with torus structure, 3187
- Toxins**
 amino acid sequence and synthesis of HC-toxin, 5309
 aspersitin structure and synthesis, 2527, 2531
 from *Saurus cernuus*, 4947
 fumitremorgin, model study for synthesis, 2171
 gephyrotoxin, new approach, 2881
 guanidine ptilocaulin, synthesis, 861
 linear poly ketol, from *Phyllosticta maydis* structure, 3803
 mycotoxins from *Myrothecium roridum*, 3539
 novel class of insect-activated selective poisons, 2461
 palytoxin, stereocontrolled synthesis of C.85-C.98 segment, 2243
 palytoxin, synthesis of C.23-C.37 segment, 1463
 phytotoxic metabolites from *Aternaria solani*, 5375
 pumiliotoxin C, biomimetic synthetic approach, 1493
 structure of PB-1 isolated from *Ptychodiscus brevis*, 855
 synthesis of (+)-talaramycin B, 4781
 venom of *Vespar crabro*, semi-terpenoid esters, identification, 5811
- Transfer reactions**
 intramolecular *O* atom transfer, formation of K-region arene oxide 1-benzoyl-9,10-epoxy-9,10-dihydrophenanthrene, 2327
- Triazines**
 derivatives of 1,2,4-triazino-[6,5-*e*]-1,2,4-triazine system, prep, 1767
 ketene silyl acetals, reaction with hexahydro-1,3,5-triazines, 913
 preparation of 1,2,4-triazines, 4511
 reaction of 1,2,4-triazines with bifunctional dienophiles, 4087
 substituted 1,2,4-triazines H-substitution with carbanions of chloromethyl sulphonyl compds, 3277
- Triazoles**
 mesoionic, by reaction of 4,4-dichloro β -lactam with phenylhydrazine, 1035
 reaction of 1,1'-thiocarbonylbis(1,2,4-triazole) with aldonitrone, 4927
 transformation of 4-aminoisoxazole into 1-hydroxy-1,2,3-triazole, 3145
- Triazolines**
 cyclocondensation of DMF with Δ^2 -1,2,3-triazolin-5-one, 4473
 reaction of 4-phenyl-1,2,4-triazoline-3,5-dione with bicyclopentene to yield a urazole, 5727
 synthesis of 1,2,4-triazoline-3,5-dione derivs of ergosterol, 2995
- Troponoids**
 dihydrodiazatropone, prep, 5469
 single-decked [8](3,7)-tropolonaphane, synthesis, 3879
- Tungstan compounds**
 complexes, catalysts in intramolecular Diels-Alder reactions, 3037

Ureas

active ureas and nitrosoureas, synthesis using N,N'-disuccinimido carbonate, 4569

Vanadium compounds

oxidation of secondary OH functions using VO(acac)₂-^tBuOOH, 5009

Vitamins

D₃ and its metabolites, synthesis, 3079
 enantiomerically pure vitamin E side chain, synthesis using chiral propionate synthon, 1235
 ESR of K₁ chromonoxyl and chromenoxyl radicals, 5099
 precursor of 1(S)-hydroxy-cholecalciferol, synthesis, 3083
 retinal analog synthesis, 2481
 stereospecific synthesis of 25-hydroxy-7,8-dihydroergosterol and its C-24 epimer, 4477
 synthesis of 1 α -hydroxyvitamin D₃, 4257
 use of vitamin D derived CD fragment, stereochemical probe and stereoselective synthesis of precursors, 3939
 vitamin D synthon, synthesis, 1859
 vitamin K₁, synthesis by cross coupling, 1905

X-ray crystallography

absolute configuration of (-)-oudemansin, 2009
 adduct, dimethylacetylenedicarboxylate and 3-methyl-4-(1-pyrrolidinyl)-2H-thiochromene, 2413
 analysis of triterpene quinone methide, netzahualcoyone, 3033
 analysis, δ -ammoniomethylsulphurane, 4859
 analysis, albanol A methyl ether, 3013
 ansa type monoterpenylbenzenoid, 2407
 anticancer cembreoid, (\pm)-asperdiol synthesis, 2267
 aryl esters of tris(fluoro-sulphonyl)methane aci form, 87

aspersitin structure and synthesis, 2527, 2531
 crystal structure of fusicoccane diterpenoid, 3787
 cyclophanes incorporating 1,3-disubstituted ferrocene moiety, spectroscopy and X-ray, 5757
 dibromogriseusin A, 389
 dicyano-1,5-dimethylsemi-bullvalenes, 5595
 dimer of 1,2-dehydroisophtosantonin lactone, crystal structure, 4417
 epoxydictymene, 4341
 evidence for quadricyclene, 181
 gymnocolin, new *cis*-clerodane diterpenoid, 115
 halosulphuranes, 4337
 hexakis(phenyloxy)benzenes, 3269
 intermediate for synthesis of guaianolides, correction, 1959
 new terpenoid quinone methides, 1535
 non planarity around common π -bond in each stereoisomer of fused norbornene-norcarene system, 4747
 novel 3,5-diarylpyridones, 2973
 pentagydine structure, 959
 phenylcamphoric acid, 2441
 pisolactone, lanosterol deriv with carboxylic acid function, 2205
 R configuration of (+)-3-PPP, 343
 reversible dimerisation of phenylbutadienes in solid state, 3263
 revised structure of pseudo-anisatin, 771
 skeletal enantiomerism in benzo[9]annulene, 4279
 solid di-9-pentacyclo-[4.3.0.0^{2,4}.0^{3,6}.0^{5,7}]-nonyl ether bicyclo bond shortening, 2431
 stable bis π -allyliron dicarbonyl complex IV, structure, 1611
 stereostructure of muurolene dihydrochloride, 1455
 structure of [6]paracyclophan-8,9-dicarboxylic acid dimethyl ester, 707
 structure of 1-acetyloctahydroindole-2-carbonitrile, 5347
 structure of 5-oxidopyridazinium

betaines, 1285
 structure of alloisolongifolol-p-nitrobenzoate, revision of alloisolongifolene structure, 4739
 structure of complexes of 4,4-diethymorpholinium with 2,5-dibromo-TCNQ, 1205
 structure of flavinocyclophane, 1925
 structure of new brominated metabolites from red seaweed, 4143
 structure of paraherquonin, 3113
 structure of poitediene, 4649
 structure of schisanlactone A, 2351
 structure of silathiacyclopropane, 4033
 structure, 2:1-adduct of acetylene dicarboxylate and dehydro-nuciferine, 167

Xanthenes

persistent free radical in cycloaddition of phenylallene with xanthenethione, 2299

Ylides

azomethane ylides, prep, 4303
 azomethine ylide equivalent, use of α -cyanoaminosilane in synthesis of pyrrolidines, 3447
 evidence for homoquadricyclene, 181
 nitrile ylids from reaction of acetonitrile with 1-naphthylcarbene, 3955
 oxido phosphonium ylides, Wittig reaction with aldehydes, 2477
 ring enlargement of N-iminopyridinium ylide, formation of two chlorodiazepines, 3327
 specifically deuterated 1,3-diethoxycarbonylallylidenetriphenylphosphonium ylide, 743
 stable selenxanthenium ylides, 75
 vinylic epoxides via arsonium ylides, 4419

Zinc and compounds

ketones by Pd-catalysed acylation of organozincs, 5181
 stereoselective, of 3-oxo amides with zinc borohydride, 5385