JOURNAL OF THE CHEMICAL SOCIETY

# Perkin Transactions I

A journal of organic and bio-organic chemistry

1988



ROYAL SOCIETY OF CHEMISTRY

© The Royal Society of Chemistry, 1988. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photographic, recording, or otherwise, without the prior permission of the publishers.

Printed in Great Britain by Richard Clay Ltd., Bungay, Suffolk

### AUTHOR INDEX

Aasen, Arne J., 1283 Abe, Mariko, 1155 Aberhart, D. John, 343, 1547, 2119 Abraham, Raymond J., 2443 Acevedo, Julio C., 931 Achilli, Fiorella, 417 Ackland, Mark J., 1477, 2009, 2013 Adger, Brian M., 2785, 2791 Agarwal, Shiv K., 3013 Aikawa, Yumiko, 2423 Ajaz, Abid A., 3183 Akhtar, Muhammad, 2043 Akiba, Kin-ya, 725 Akihisa, Toshihiro, 439 Akimoto, Hiroshi, 1637 Akiyama, Shuzo, 3155 Al-Šhaar, Adnan H. M., 3019, 3025 Alam, Maktoob, 2537 Alam, Muzaffar, 2175 Albertola, Angel, 791 Alcock, Nathaniel W., 2839 Alemany, Antonio, 2861 Alexander, Rikki P., 2069 Alexandrou, Nicholas E., 3233 Ali, Irshad, 2175 Ali, Sk. Asrof, 597 Alkorta, Ibon. 1271 Almeida, M. Lurdes S., 1905 Alo, Babajide I., 1997 Alvárez G., Jaime, 931 Aly, Moustafa F., 949 Ameer, Farouk, 1425 Ananda, G. D. Sriyani, 1765, 3359 Anderson, John R., 823 Ando, Akira, 2913 Andreoli, Patrizia, 945 Andrews, Laura E., 1735 Andruzzi, Romano, 3067 Ang, Siau-Gek. 1949 Anjancyulu, Ammanamanchi S. R., 623 Antolin, Luis Fernando, 791 Antonakis, Kostas, 1219 Antoni, Gunnar, 3081 Aoyama, Hiromu, 1353, 2203 Aoyama, Yasuko. 1209 Apparao, Satyam, 169 Appelman, Evan H., 1735 Arán, Vicente J., 1271 Aragozzini, Fabrizio. 1865 Arai, Sadao, 415 Arai, Yoshitsugu. 3133 Arasaki, Motohiro, 1047 Archer, David A., 3223 Arnone, Alberto, 503 Arraez, Jacinto D., 1513 Arribas, Enrique, 649 Asahina, Banque, 049 Asahina, Masahiro, 1149 Asensio, Gregorio, 1631 Ashmawy, Mohamed I. Al, 2509, 2517, 2523 Ashnagar, Alamdar, 559 Ashry, El Sayed H. El, 133, 139 Ashworth, Dorcen M., 1719, 3059, 3183 Atherton, Eric, 2887 Atta-ur-Rahman, 2175

Auclair, Jean-Paul, 23 Auret, Barbara J., 2827 Austrup, Mona, 3169 Avent, Anthony G., 1997 Avery, Mitchell A., 587 Ayres, David C., 2573 Ayrey, Peter, 2791 Azuma, Kishiko, 2955 Baccolini, Graziano, 971, 3281 Bachi, Mario D., 1517 Backman, Irene, 889 Bailey, Patrick D., 739 Bailey, Stuart, 2767 Baker, Mark G., 1187 Baker, Raymond, 85, 125, 471 Bakhmutov, Vladimir I., 305 Bakhmutov, Vladimir A., 2075 Balboni, Gianfranco, 1645 Baldó, Beatriz, 1029 Ballester, Pablo, 1711, 2797 Ballini, Roberto, 2563 Banerjee, Ajoy Kumar, 931, 2485 Banfi, Luca, 2369 Banks, Ronald Eric, 2805 Bannister, Robin, 2785, 2791 Barbour, Robert H., 1169, 1923 Barbuenga, José, 981, 1631, 1739, 2329, 3113, 3339 Barnes, John C., 3391 Banes, John C., 3391 Basok, Stepan S., 3141 Bass, Robert J., 77 Bates, Mark A., 3037 Bates, Paul A., 297, 2993 Battersby, Alan R., 1187, 1557, 1569, 1577 Baumann, Herbert, 209 Baxter, Robert L., 365, 913 Bayliff, Andrew E., 201 Baynham, Mark K., 1455 Bayón, Ana M., 1631 Beagley, Brian, 2259 Beale, Michael H., 1983 Begley, Michael J., 1085, 1095, 1677 Belikov, Vasili M., 305, 2075 Bell, Kevin H., 1957 Belluci, Giuseppe, 2715 Belokon', Yuri N., 305, 2075 Belton, James G., 145 Benati, Luisa, 1859 Benincori, Tiziana, 2721 Benson, Mabry E., 711 Bernardi, Rosanna, 2831 Bernstein, Joel, 2751 Beyer, Werner, 779 Bezuidenhoudt, Barend C. B., 37, 1227, 1237 Bezuidenhout, S. Catherine. 1237 Bhakuni, Dewan S., 1447, 1929 Bhat, Uppoor G., 657 Bhattacharjee, Gopa, 939 Bhuyan, Pulakjyoti, 607 Bianchi, Clementina, 1645 Bianchi, Giorgio, 417 Bialsa, Agustín G., 1271 Biggadike, Keith, 549 Bindig, Uwe, 697 Birkinshaw, Timothy N., 2209 Birse, Ewan F., 1039

Bittner, Shmuel, 2751 Blair, Ian A., 2821 Blake, Alexander J., 2145 Blanc-Muesser, Michèle, 3345 Block, Michael H., 1577 Boggio, Silvana B., 1551 Bojilova, Anka, 3233 Bolton, Richard E., 2491 Bonini, Bianca F., 1499 Bonnett, Raymond, 1735 Borea, Pier A., 1645 Borthwick, Alan D., 549 Bosch, Eric, 1517 Boschetti, Anna, 3353 Boulton, A. J., 1509 Bouvier-Navé, Pierrette, 461 Bowles, Timothy, 803, 1023 Bowman, Nigel J., 259 Boyd, Derek R., 2827, 3013 Boyer, Joseph H., 2137 Branch, Clive L., 2865 Brandt, E. Vincent, 37, 1227, 1237 Brandt, Edward V., 3323, 3331 Brandt, Klaus, 3311 Bravo, Pierfrancesco, 2831 Brehm, Lotte, 359 Brettle, Roger, 2185 Breuer, Eli, 3047 Brewster, Andrew, 663, 675 Brimacombe, John S., 3391 Brimble, Margaret A., 125 Bromidge, Steven M., 3223 Brooke, Gerald M., 2023 Brookes, Michael H., 9 Brown, David S., 2033 Brown, Desmond J., 593 Brown, Michael D., 813, 817 Bruce, J. Malcolm, 559 Bruzik, Karol S., 423 Bryce, Martin R., 2141 Bulychev, Aleksandr G., 2075 Buntain, Ian G., 3175 Burger, Johann F. W., 37, 3323, 3331 Burke, Basil A., 1283 Burns, Dennis H., 3119 Burpitt, Brian E., 3103 Buscemi, Silvestre, 1313 Busfield, W. Ken, 485 Butler, Richard N., 1587 Cabeza, Javier A., 1881 Cadet, Jean, 2555 Cadogan, J. I. G., 2875 Caesar, Julian C., 175 Cainelli, Gianfranco, 945 Calderon, José S., 583 Calo, Vincenzo, 1301 Calvo-Mateo, Ana, 2861 Camarasa, Maria-José, 2861 Cameron, Linda R., 2895 Campos, Pedro, 1631 Cano, Félix H., 2329 Cardellini, Liberato, 3067 Cardillo, Rosanna, 503, 2831 Carlton, Laurence, 881 Caronna, Tullio, 1313 Carpy, Alain, 3311 Carr, Gillian E., 921 Carr, Katherine, 1599

Carruthers, William, 1625, 2251, 225 Carter, Stephen P., 2639 Carter, Steven D., 3097 Cativiela, Carlos, 1881 Cattel, Luigi, 461 Cavicchioni, Giorgio, 43 Cerrini, Silvio, 2647 Ceruti, Maurizio, 461 Chagonda, Lameck S., 875 Chakraborti, Ratna, 795 Chakravarty, Ajit K., 611 Challacombe, Katherine, 2213 Chambers, Richard D., 201, 251, 255, 921 Chan, Florence S. Y., 899 Chan, Tin-Tau, 3317 Chang, Han-Ting, 1945 Charon, Daniel, 2243 Chatterjee, Amareshwar, 611 Chen, Chen, 2855 Chen, Qing-Yun, 563 Chenchaiah, P. Chinna, 2027 Cheng, Jie-Fei, 2403 Cheng, Jie-fei, 2403 Cheng, Kin-Fai, 3317 Cheong, Catherine L., 3301 Chernoglazova, Nina I., 305 Cheung, H. T. Andrew, 1851 Chiacchio, Ugo, 2639 Chopra, Akash K., 1371, 1383 Choshi, Tominari, 2429 Chrétien Françoise 3297 Chrétien, Françoise, 3297 Christensen, Siegfried B., 839 Chu, Shih-Der, 1593 Cicero, Maria G., 1313 Cimminiello, Guido, 1699 Clerq, Erik De, 2233 Cocker, Wesley, 1527 Coe, Paul L., 555 Cojocaru, Miriam, 733 Collado, Isidro G., 105, 1451 Colonna, Stefano, 1695 Conant, Robert, 981 Concellón, José M., 3339 Contention, Jose M., 3339 Conde, Santiago, 649 Contento, Michele, 945 Cook, Michael I., 555 Cook, Michael J., 2453 Coombs, Maurice M., 2745 Coote, Steven J., 1481 Costa, Antonio, 1711, 2797 Cotterill, Ian C., 3387 Cotting, Jacques-Alain, 2119 Count, David J. Le. 451 Coutts, Andrew, 913 Cox, Michael T., 3217 Crabb, Trevor A., 1173 Craveri, Renato, 1865 Crawford, Lynne P. 3103 Crilley, Martine M. L. 2061 Crombie, Leslie, 1243, 1251, 1255, 1263 Crombie, W. Mary L., 1243, 1251, 1255, 1263 Csuk, Rene, 1729 Cummins, Jane H., 3047 Cummins, Jane 11, 1977 D'Angeli, Ferruccio, 43 Dainter, Ronald S., 227 Dalpozzo, Renato, 971 Daly, Christopher M., 1933 Danks, Timothy N., 2091

Davies, Bryan J., 3103 Davies, Stephen G., 1481 Davis, Michael, 183 Davis, Steven G., 839 Dawson, Ian M., 2585 de Armas, Pedro, 3255 de Carrasco, María C., 2485 de Kanter, Frans J. J., 1203, 2547 de Koning, Charles B., 2477, 3209 De las Heras, Federico G., 2861 Dembiński, Roman, 2197 Demetriadou, Agathi K., 763, 769, 773 Dhaneshwar, Narayandatt N., 157.657 Diaz de Villegas, Maria D., 1881 Diaz-Ortiz, Angel, 2861 Di Cesare, Pierre, 3297 Dickerman, Shulamit, 927 Dickinson, Julia M., 1455 Dmowski, Wojciech, 1179 Doad, Gurinder J. S., 2993 Doleschall, Gábor, 1875 Dosio, Franco, 461 Dowsett, Marion, 1527 Drake, Alex F., 2827 Dransfield, Trevor A., 2141 Drew, Michael G. B., 433 Drewes, Mark W., 1425 Drewes, Siegfried E., 1425 Drewniak, Malgorzata, 2339 Driguez, Hugues, 3345 Du Boisson, Richard Arthur, 2805 Dunlop, Robert, 2827, 3013 Dunn, Adrian J., 2453 Dunn, Peter J., 1745 Dur, Annick Le, 707 Dutton, Christopher J., 1557, 1569 Dyer, Ulrich C., 53 Dziadulewicz, Edward, 3367 Easton, Christopher J., 259, 265 Eaton, Michael A. W., 545 Ebine, Seiji, 1541 Ebizuka, Yutaka, 2407 Edwards, Philip N., 555 Edwards, Raymond L., 823 Eggleston, Drake S., 439 Серголон, Блаке S., 439 Egron, Maria-José, 1219 Eguchi, Hisao, 1869 Eguchi, Shoji, 719, 1047, 2149, -2955 Ejiri, Emiko, 385, 395 Ekhato, I. Victor, 3239 El-Sheikh, Azza A. M., 1961 Elliger, Carl A., 711 Ellis-Davies, Graham C. R., 31 Ellis, Karen, 1071 Elmore, Donald T., 1051 Elsworth, John F., 2469 Emmett, John C., 3085 Emsley, John, 297 Engelhardt, Lutz M., 1845, 3209 Engeinardt, Lutz M., 1845, Engman, Lars, 2095 Epling, Gary A., 703 Erbing, Bertil, 889 Erös-Takácsy, Tünde, 2019 Esser, Franz, 3311 Evans, Derek, 549 Evans, Geoffreit, E. 755 Evans, Geoffrey E., 755 Ewing, David, 2541 Exall, Anne M., 549 Eyama, Noriko, 2271 Fales, Henry M., 3071 Fañanás, Francisco J., 981 Fang, Jim-Min, 1945

Fasth, Karl-Johan, 3081 Fedorova, Eugenia B., 2075 Feit, Ben-Ami, 927 Ferguson, J. A. K. Jamie, 2023 Fernández-Resa, Piedad, 649 Fernández, José R., 3113 Fernández-Simón, José L., 3339 Ferreira, Daneel, 37, 1227, 1237, 1325, 2179, 2567, 3323, 3331 Ferretti, Maria, 2715 Fetter, József, 1135 Filonova, Lyubov K., 3141 Firth, David F., 1251, 1263 Firth, Susan M., 31 Fisher, Keith J., 917 Fishman, Ariela, 927 Fitzgerald, Kevin J., 1587 Florio, Emily M., 703 Foces-Foces, Maria de la Concepción, 2329 Fomum, Z. Tanee, 277, 975, 1759 Fookes, Christopher J. R., 1003, 1557, 1569 Foresti, Elisabetta, 1499 Forth, Michael A., 2791 Föster, Hans-Joachim, 3311 Fourie, Theunis G., 2625 Fowles, Andrew M., 1973, 1983 Fraga, Braulio M., 105, 1451, 1513 Francisco, Cosme G., 3255 Franzén, Henry M., 497 Fraser, Alison M., 3275 Freeman, Neville J., 297 Freeman, Sally, 2737 Fresneda, Pilar M., 1819 Fuchita, Yoshio, 1431 Fuganti, Claudio, 3061 Fuganti, Ciaudio, 3061 Fujino, Atiharu, 587 Fujioka, Yoko, 535 Fujita, Satoshi, 385, 395 Fujita, Tetsuro, 379 Fujita, Tsutomu, 2203 Fukata, Gouki, 327 Fukuda, Akiko, 1353 Fukumoto, Keiichiro, 885, 1155, 1277, 2835, 2963 Fukushi, Hideto, 2335 Fukuyama, Yoshiyasu, 445 Fukuzawa, Shin-ichi, 1669 Furneaux, Richard H., 49 Fürstner, Alois, 1729 Furukawa, Yoshio, 719 Furuta, Takashi, 587 Fusco, Raffaello, 2721 Fustero, Santos, 1739 Gallagher, Timothy, 3367 Gamba, Anna, 417 Gani, David, 3195 Garbalinskaya, Natalia S., 305 Garcia-Raso, Angel, 2797 Garson, Mary J., 1003 Gavuzzo, Enrico, 2647 Gergely, Anna, 3267 Germinario, Giulio, 1695 Ghatak, Usha Ranjan, 795, 939 Ghiringhelli, Dario, 2831 Ghosh, Cha Kanta, 1489 Ghosh, Pushpito K., 1749 Giacomini, Daria, 945 Gibson, Dan, 3047 Gigg, Jill, 981 Gigg, Roy, 981 Gilbert, Andrew, 31 Gilchrist, Thomas L., 2169, 2595, 2603

Giles, Robin G. F., 2459, 2469, 2477, 3209 Gill, G. Bryon, 1677 Gillard, Frédéric, 2291 Gillespie, Roger J., 803 Gilmour, David W., 3019 Girling, Ian R., 1317 Glahsl, Gudrun, 1753 Glover, Steven S. B., 365 Gómez-Solivellas, Antonio, 1711 Godfrey, Andrew A., 3217 Goff, Dane A., 2443 Golt, Dane A., 2443 Goldblum, Amiram, 43, 3047 Golding, Bernard T., 9, 2061 Goldsby, Gwendolyn, 1283 González, Ana, 791 González, Francisco J., 1739 Gonzalez-Nuñez, Elena, 1631 Gonzalez-Sierra, Manuel, 2323 Goodchild Nicholas L, 555 Goodchild, Nicholas J., 555 Goodyear, Michael D., 3097 Gordon, Eric M., 365 Gordon, John F., 1473, 1477, 2009, 2013 Gore, Vinayak G., 481 Gorvin, John H., 1331 Gotor, Vicente, 1739 Gottlieb, Hugo E., 733 Gould, Robert O., 365 Gould, Steven J., 2283 Gramain, Jean-Claude, 23 Grasselli, Piero, 3061 Graziano, M. Liliana, 1699 Greci, Lucedio, 3067 Green, Ivan R., 2459, 2469 Gregory, Julian A., 2585 Grehn, Leif, 497, 1905 Griffiths, D. Vaughan, 175 Grigg, Ronald, 541, 949, 1357, 1365, 2693, 2703 Gross, Bernard, 3297 Grundon, Michael F., 2917 Guanti, Giuseppe, 2369 Guaragna, Alberto, 2369 Guillermo, Ricardo, 1513 Gunaherath, G. M. Kamal B., 407 Gunatilaka, A. A. Leslie, 407 Gunatilaka, A. A. Leone, J Gupta, Ramesh C., 1773 Gururow, Tayur N., 157 Guthrie, David J. S., 1051 Haag, Thierry, 2353 Haas, Alois, 1179 Habib-ur-Rehman, 2175 Haddon, William F., 711 Hagan, Desmond B., 1165 Haider, Nachert 401 Haider, Norbert, 401 Hajikarimian, Yousef, 2791 Halász, H. Anna, 2905 Hamada, Tatsuo, 2913 Hankovszky, H. Olga, 2905 Hanson, James R., 105, 1451, 1455, 1461, 1465, 1469, 1473, 1477, 1997, 2001, 2005, 2009, 2013 Hanuš, Vladimir, 2053 Haq, Intikhabul, 2175 Harada, Kazuo, 529, 535, 1521 Harapanhalli, Ravi S., 2633, 3149 Harayama, Takashi, 2335, 2555 Harger, Martin J. P., 2737 Harlow, Richard L., 899 Harnden, Michael R., 2757, 2767 2767, 2777 Harper, Andrea E., 2745 Harris, C. John, 2169 Harrison, Kenneth J., 2453 Harusawa, Shinya, 3163

Harvey, Ian W., 681, 1939 Hasegawa, Shun, 3029 Hasegawa, Taisuke, 593 Hasegawa, Yukio, 2271 Hashiguchi, Shohei, 2345 Hassner, Alfred, 733 Hata, Kumiko, 1897 Hatjiarapoglou, Lazaros, 2839 Hatta, Taizo, 1869 Hay, Michael P., 259, 265 Hayakawa, Kenji, 511 Hayashi, Gen, 2113 Hayashi, Koji, 787, 2621, 2625 Hayashi, Yoshikazu, 3133 Head, John C., 85 Head, John C., 85 Heath, Peter, 31 Heinisch, Gottfried, 401 Heissler, Denis, 2291 Hellberg, Jonas, 2095 Herbert, John A. L., 991 Herbert, Richard B., 2585 Herder, Renella E., 1203, 2547 Hermecz, István, 2019 Hernández Maria Isabel, 1349 Hernández, María Isabel, 1349 Hernández, Rosendo, 3255 Herranz, Rosario, 649 Herrmann, Rudolf, 1753 Herscheid, Jacobus D. M., 1203, 2547 Herscovici, Jean, 1219 Heslin, Julie C., 1417 Hetru, Charles, 2353 Hevesi, Låzlò, 1033 Hewgill, Frank R., 1305, 1845 Hibi, Shigeki, 529 Hibino, Satoshi, 2429 Hickey, Deirdre M. B., 3097, 3103 Hicks, Martin G., 69 Hickson, Clare L., 339 Hida, Mitsuhiko, 415, 1787 Hideg, Kálmán, 2905 Hirano, Masao, 2423 Hirao, Ken-ichi, 2913 Hirata, Yoshimasa, 2403 Hirata, Yumiko, 2219 Hirayama, Shinji, 521 Hirokami, Shun-ichi, 2653 Hirooka, Shuji, 385 Hirota, Kosaku, 2227, 2233 Hirshfield, Jordan, 471 Hitaka, Takenori, 1637 Hitchcock, Peter B., 105, 1451, 1455, 1465, 1469, 1473 Hodgson, David, 3367 Hofstraat, Rob G., 2315 Högberg, Hans-Erik, 3061 Holder, Jill L., 2887, 2895 Holland, Herbert L., 2027 Hollinshead, Sean P., 739 Holmes, Thomas F., 921 Honda, Toshio, 193, 833, 1503, 1593, 2433 Hori, Kozo, 1149 Hori, Mikio, 1209, 1885, 2271 Hosoya, Katsuhiro, 2377 Hosoya, Ken, 2397 Howard, Arthur S., 881 Howe, Steven D., 2453 Hsu, Chen Fu, 2271 Huang, Yao-Zeng, 2855 Hudson, Alan T., 9 Huel, Christiane, 283, 3285 Hughes, Nigel, 227, 251, 255 Humber, David C., 1685 Hunter, Daniel, 1439 Hursthouse, Michael B., 297, 2002 2993 Hurtado S., Héctor, 931

Hutchison, H. Susan, 2875 Ibrahim, Badr Eldin, 917 Iddon, Brian, 991, 1933 Idle, Jonathan, 2703 Ienaga, Kazuharu, 593 Iesce, M. Rosaria, 1699 Iguchi, Shin, 2129 Ihara, Masataka, 1155, 1277, 2963 Iitaka, Yoichi, 1885 Ikeda, Satoru, 1787 Ikeda, Satoru, 1787 Ikemori, Megumi, 1209 Ila, Hiriyakkanavar, 169, 2365 Imamiya, Eiko, 1637 Inoue, Masuo, 2037 Inoue, Seiichi, 3029 Iorizzi, Maria, 1337 Trie Michiko, 1057 Irie, Michiko, 1057 Ishag, Christina Y., 917, 2095 Ishida, Yohhei, 1155 Ishii, Hisashi, 2377, 2387, 3005 Ishikawa, Masanori, 415 Iskander, George M., 917 Itoh, Masahito, 491 Itoh, Takashi, 327 Iwasaki, Hiroshi, 2955 Jackson, Lorraine B., 1791 Jain, Sudha, 1447, 1929 Jamieson, Sally V., 1243 Jansson, Per-Erik, 209, 889, 2729 Jarvest, Richard L., 2777 Jarvis, Andrew G., 1473 Jasiczak, Jan, 2687 Jenkins, Ian D., 485 Jennings, W. Brian, 3013 Johnson, Andrew, 975 Johnson, Graham P., 3399 Jones, David N. M., 1983 Jones, Gurnos, 69 Jones, Keith, 999 Jones, Martin F., 2927 Jones, Ray, 1023 Jones, Sarah J., 3097 Jordis, Ulrich, 1933 Joule, John A., 1, 1705 Junjappa, Hiriyakkanavar, 169, 2365 Kabir, Abul K. M. S., 3391 Kadoya, Shizuo, 2955 Kaji, Aritsune, 2397 Kaji, Makoto, 321 Kajtár-Peredy, Mária, 1135 Kajuai-reicuy, Mafia, 1155 Kálmán, Alajos, 3267 Kamano, Yoshiaki, 2037 Kametani, Tetsuji, 193, 833, 885, 1155, 1277, 1503, 1593, 2433, 2835 2063 2835, 2963 Kamiński, Rafal, 2197 Kandeel, Kamal A., 2141 Kane, Peter D., 433 Kaneko, Kô, 787, 2621, 2625 Kanematsu, Ken, 511 Karaman, Rafik, 3047 Kashima, Choji, 151, 529, 535, 1521 Kashoulis-Koupparis, Annoula, 31 Kasuya, Yasuji, 587 Kataoka, Tadashi, 1209, 1885, 2271 Kato, Hiroshi, 189 Kato, Tadahito, 385 Katogi, Mamoru, 2963 Katritzky, Alan R., 161, 917, 2339 Kaufman, Teodoro S., 2323 Kaura, Arun C., 2259, 2813 Kawahara, Nobuo, 907, 2611

Kawai, Ken-ichi, 907, 1689, 2155, 2607, 2611 Kawamura, Kuniaki, 193 Kawano, Nobusuke, 1537 Kay, Gillian, 1051 Kay, I. Trevor, 1603, 1613 Kenne, Lennart, 209, 889, 1183, 272 Khan, Agha Zul-Qarnain, 2085 Khan, Ejaz A., 2917 Khare, Anakshi, 1383, 1389 Kido, Keiko, 511 Kigawa, Masaharu, 1503 Kikuchi, Jun-ichi, 1289 Kilany, Yeldez El, 133, 139 Kilany, Yeldez El, 133, 139 Kimura, Masaru, 3307 King, Frank D., 2169, 3381 Kirby, Gordon W., 301, 1913 Kirk, Barrie E., 549 Kirk, David N., 2979, 2983 Kiss, Miklós, 1509 Kitade, Yukio, 2233 Kitao, Teijiro, 1829 Kline, Donald N., 2639 Knight, Lorraine S., 2477 Knowles, Philip, 3249 Kobayashi, Jun'ichi, 2403 Kobayashi, Kazuhiro, 491 Kočovský, Pavel, 2297 Kochetkov, Konstantin A., 305 Köchetköv, Könstäntin A., 30 Köppen, Herbert, 3311 Koga, Masakazu, 1809, 1813 Kohzuki, Kouichi, 2835 Koizumi, Toru, 1149, 3133 Kokke, W. C. M. C., 439 Kolodziej, Herbert, 219 Kolonits, Pál, 3267 Komatsu, Keiko, 2439 Konatsu, Keiko, 2439 Kondo, Masaji, 2921 Kong, Yun-Cheung, 3317 Kotkar, Dilip, 1749 Kotsuji, Yasuhito, 445 Kouno, Isao, 1537 Koyama, Hirozo, 1885 Koyama, Kikuhiko, 521, 2277 Kozyrev, Andrei N., 1735 Kramer, Walter, 983 Krogsgaard-Larsen, Povl, 359 Kubo, Yuji, 2439 Kulkarni, Mandakini M., 157 Kumar, V. P. Sashi, 1961 Kumata, Katsushi, 2309 Kura, Hisatoshi, 3307 Kura, Hisatoshi, 3307 Kurihara, Takushi, 3163 Kuroda, Shigeyasu, 385, 395 Kuwahara, Itsuko, 313 Kyoya, Eiji, 1869 Ladlow, Mark, 1095, 1107 Laguna, Miguel Angel, 791 Lai, Jan-Ji, 3119 Lai, Ting-Fong, 3317 Landor, Phyllis D., 277, 975, 1759 1759 Landor, Stephen R., 277, 975, 1759 Lange, Jos, 2315 Långström, Bengt, 497, 3081 Larsen, Lesley, 1705 Lasne, Marie-Claire, 99 Laue, Ernest D., 763, 769, 773 Lavaud, Catherine, 3071 Lawson, Kevin R., 663 Laya M., Manuel, 931 Leach, Susan E., 2213 Leader, Haim, 3047 Leeper, Finian J., 763, 1187 Leeson, Paul D., 3085, 3097, 3103 Leger, Jean-Michel, 3311

Le Men-Olivier, Louisette, 3071 Lempert, Károly, 1135, 3267 Leslie, Bruce W., 675 Levin, Daniel, 1799 Lewis, Christopher N., 747 Lewis, Norman J., 2785, 2791, 3097, 3103 Lhoste, Jean-Marc, 283, 3285 Lindsay, Charles M., 569 Lippi, Annalisa, 2715 Liu, Dashan, 2161 Liu, Dashan, 2161 Lloyd-Williams, Paul, 559 López, Fernando, 2329 Loock, Bernard, 283 Lopez, Luigi, 1301 Lorenc, Ljubinka, 1495 Love, Stephen G., 259, 265 Lucente, Gino, 2647 Luis, Javier G., 1513 Luis, Javier G., 1513 Lukyanenko, Nikolai G., 2533, 3141 Lundin, Robert E., 711 Luu, Bang, 2353 Lythgoe, David J., 3019, 3025 Maccagnani, Gaetano, 1499 Macfarlane, Emma L. A., 3387 Machida, Hideaki, 415 Machida, Katsunosuke, 2555 Mackenzie, Grahame, 2541 MacLeod, John K., 1003 MacMillan, Jake, 1973, 1983 Maconi, Elisabetta, 1865 Madsen, Ulf, 359 Maekawa, Eturô, 575 Mahajan, Satish W., 1749 Maillard, Philippe, 3285 Maini, Prem Nath, 161 Maiti, Jharna, 1489 Maiti, Swaraj B., 611 Maki, Yoshifumi, 2227, 2233 Malan, Johannes C. S., 1325, 2179, 2567 Mallavadhani, Uppuluri V., 623 Manabe, Osamu, 313, 1431 Mandal, Arun K., 1749 Manfredi, Amedea, 1695 Manimaran, Thanikavelu, 2137 Mann, John, 433, 545 Maran, Flavio, 43 Marastoni, Mauro, 1645 Marat, Kirk, 1961 Marioni, Franco, 2715 Marley, Hugh, 351 Marples, Brian A., 875, 2033, 3399 Marsham, Peter R., 663 Marson, Anthony P., 451 Martin, Alfonso, 1349 Martelli, Giorgio, 945 Martin, Tracey, 235, 241 Martinez-Gallo, José M., 981 Martinez, Silvio J., 1705 Maruyama, Kazuhiro, 1143 Maruyama, Tatsuya, 535 Mascaretti, Oreste A., 1551, 2059 Mason, Jennifer M., 49 Masrawe, Djamal, 927 Massiot, Georges, 3071 Masumoto, Masayuki, 385 Mata, Ernesto G., 1551 Mataka, Shuntaro, 179, 327, 1869 Matsumoto, Taro, 439 Matsuira, Takeo, 1289 Matulić-Adamić, Jasenka, 2681 Maxwell, James R., 1065, 1071 May, Christopher, 247 Maycock, Christopher D., 2259

Mazzanti, Germana, 1499 Mbafor, J. Tanyi, 975, 1759 McClenaghan, Ian, 3019, 3025 McCullough, Kevin J., 351 McDonald, Brian P., 663, 675 McElhinney, R. Stanley, 145 McFarlane, Michael D., 681, 691, 1939 McInally, Thomas, 1837 McInally, Thomas, 1837 McKenzie, Alexander, 1039 McKie, Marion C., 365 McMeekin, Peter, 2703 McMorris, Trevor C., 2161 McNab, Hamish, 333, 339, 863, 869, 2145, 2875 Meakins, G. Denis, 2209, 2213 Medina, José Domingo, 1349 Meghani Premii 1 Meghani, Premji, 1 Meille, Stefano Valdo, 503 Meldal, Morten, 2887, 2895 Mellor, John M., 2501, 2509, 2517, 2523 Merrett, John H., 61 Mestres, Ramon, 1711, 2797 Meth-Cohn, Otto, 2663 Meunier, Catherine J., 813 Mezzina, Elisabetta, 3281 Mibu, Nobuko, 1057 Michael, Joseph P., 881 Michalski, Jan, 2197 Michalski, Jan, 2197 Mihailović, Mihailo Lj., 1495 Miller, Barry W., 2979, 2983 Miller, Ian J., 49 Miller, Stephen P. F., 3071 Millican, T. Andrew, 545 Mills, Owen S., 663 Milovanović, Aleksandar, 1495 Minagawa, Kazuo, 587 Minale Luigi 1337 Minale, Luigi, 1337 Minamoto, Katsumaro, 2955 Mitani, Michiharu, 521 Mitchell, Michael B, 3103 Mitsuhashi, Hiroshi, 787, 2625 Miura, Masahiro, 1993 Miyamoto, Megumi, 313 Miyamoto, Yasuhiko, 1057 Miyamoto, Yasunobu, 2675 Miyano, Seiji, 1057 Miyata, Okiko, 2219 Moerlein, Stephen M., 779 Moizumi, Mari, 885 Molina, Pedro, 1819 Molina, Yolanda, 1631 Moloney, Mark G., 2847 Momenteau, Michel, 283, 3285 Monahan, Lilian C., 863, 869 Mongkolaussavaratana, Theeravat, 541 Montevecchi, Pier Carlo, 1859 Moody, Christopher J., 235, 241, 247, 1397, 1401, 1407, 1417, 2491, 3249 Moody, David J., 681, 691, 1939 Moore, Clive, 2663 Moradpour, Alec, 2751 Morgan, Ian T., 3097 Mori, Fujio, 2439 Morimoto, Takashi, 2423 Morimaga, Kenichi, 1541 Morley, Christopher, 2069 Moroi, Reimei, 2955 Morosawa, Shiro, 3307 Morris, Ian K., 77 Morris, Janet L., 1745 Morrison, Roderick, 2145 Mortlock, Simon V., 2305 Morton, William David, 2805

Mosedale, Alan J., 2185

Moses, Roger C., 1625, 2251, 2255 Moss, Gerard P., 1371, 1383, 1389 Mousaad, Ahmed, 139 Mukawa, Fumikazu, 457 Mukerjee, Arya K., 1659 Mullane, M. Valerie, 3097 Murakami, Keiko, 2377, 2387 Murakami, Yasuoki, 2377, 3005 Murakami, Yukito, 1289 Murray, Alistair W., 1039 Murray, M. Elizabeth-Ann, 333 Mutoh, Yasuhiro, 189 Nájera, Carmen, 981, 1029 Nagai, Mitsuo, 885, 2835 Nagai, Naoshi, 1143 Nagasampagi, Bhimsen A., 157, 657 Mukawa, Fumikazu, 457 Nagata, Kiyofumi, 1057 Nagata, Masanori, 2653 Nagy, József, 3267 Naili, Mahbuba, 433 Naito, Takeaki, 2219 Nakajima, Shoichi, 907, 1689, 2155, 2607, 2611 Nakamura, Hideshi, 2403 Nakamura, Hiroshi, 179 Nakanishi, Akira, 1669 Nakano, Tatsuhiko, 1349 Nakao, Hideki, 313 Nakashima, Kenichiro, 3155 Nakatsuji, Shin'ichi, 3155 Nakayama, Kouji, 179 Nakazumi, Hiroyuki, 1829, 3155 Narasimhan, Nurani S., 481 Narisano, Enrica, 2369 Narita, Ken'ichi, 1885 Naruta, Yoshinori, 1143 Naruto, Shunsuke, 1013 Nasini, Gianluca, 503 Natsugari, Hideaki, 2345 Någren, Kjell, 497 Neidlein, Richard, 983 Neilson, Douglas G., 1439 Nelson, Anthony J., 227 Nelson, Carolyn J., 1851 Nemoto, Hideo, 885, 2835 Newton, Roger F., 13 Ninomiya, Ichiya, 2219 Nishimura, Susumu, 1637 Nishio, Takehiko, 957, 1663, 2921 Nivard, Rutger J. F., 2315 Niven, Margaret L., 2459, 2477 Nkengfack, A. Ephraim, 277, 975 Noguchi, Hiroshi, 2407 Noguchi, Kazuhara, 1277 Nomura, Hiroaki, 1637 Nomura, Masakatsu, 1993 Nomura, Masakatsu, 1993 Noordhuis, Paul, 2547 Noro, Hidehiko, 2309 Nose, Taisuke, 2675 Novelli, Riccardo, 3103 Nozawa, Koohei, 907, 1689, 2155, 2607, 2611 Nozawa, Yoshihiko, 385 Nukada, Kastumi, 3307 Nyitrai, József, 3267 O'Farrell, Clare, 2785, 2791, 3103 O'Hagan, David, 3195 Ochiai, Michihiko, 2345 Ode, Alexandra E., 1997 Ogawa, Seiichiro, 2675 Ogura, Haruo, 1885 Ohizumi, Yasushi, 2403 Ohmoto, Tatsuya, 1629

Ohno, Sachio, 1885 Ohta, Shinji, 1629 Ojima, Jũro, 385, 395 Okada, Yoshio, 2129 Okamoto, Hideki, 3307 Okor, Dorcas I., 2993 Okuda, Norikazu, 1663 Omote, Yoshimori, 151, 529, 535, 957, 1353, 1663, 2203, 2921 Oro, Luis A., 1881 Oshima, Yasukatsu, 1337 Ota, Tomomi, 3029 Ota, 10momi, 3029 Owen, Philip G., 77 Owens, Nicholas, 2791 Párkányi, László, 3267 Padwa, Albert, 2639 Pagani, Silvia Bradamante, 2721 2721 Page, Philip C. Bulman, 269 Pal, Chandana, 1489 Palacios, Francisco, 2329 Palaniswamy, Venkatapuram A., 2283 Palmer, Christopher J., 1243 Pancholi, Kirit D., 3103 Panunzio, Mauro, 945 Panza, Luigi, 3353 Párkányi, László, 3267 Parker, David G., 921 Parkes, Kevin E. B., 1119 Parkin, Ann, 2757 Pass, Martin, 2491 Pathirana, Ranjith, 2501 Pattenden, Gerald, 1077, 1085, 1095, 1107, 1119, 1677, 1685 Pavela-Vrančič, Maja, 2681 Pavlov, Viacheslav A., 2075 Payne, Sheila, 981 Peakman, Torren M., 1065, 1071 Pearson, Michael J., 2865 Peek, Michael E., 2169 Pelter, Andrew, 1603, 1613 Peña-Matheud, Carmen A., 2485 Perales, Aurea, 1513 Perold, Guido W., 881 Perumattam, John, 2639 Pesce, Giannangelo, 1301 Petrini, Marino, 2563 Pettit, George R., 2037 Pfleiderer, Wolfgang, 593 Pierpoint, Colin, 2061 Pike, Graham A., 2839 Pinhey, John T., 2415, 2847 Pinnen, Francesco, 2647 Pinto, B. Mario, 2103 Plackett, Simon J., 2209, 2213 Połoński, Tadeusz, 629, 639 Podányi, Benjamin, 2019 Poloni, Marino, 3067 Pook, Karl-Heinz, 3311 Porter, Alexander E. A., 803, 809, 1023 Potter, Barry V. L., 3047 Poyser, J. Philip, 823 Prajapati, Dipak, 607 Prakash, Chandra, 2821 Pratt John A. E. 12 Pratt, John A. E., 13 Preston, Peter N., 351 Pritchard, Martyn C., 1603, 1613 Pritchard, Robin G., 2259 Pulido, Francisco José, 791 Puranik, Vedavati G., 657 Qiu, Zai-Ming, 563 Ragnarsson, Ulf, 497, 1905

Raithby, Paul R., 1187

J. CHEM. SOC. PERKIN TRANS. I AUTHOR INDEX 1988

Rajković, Milica, 1495 Rakshit, Devajyoti, 2091 Ramdohr, Jurgen E., 2469 Ramsden, Christopher A., 3019, 3025 Ranu, Brindaban C., 795 Rao, Ghanakota V., 301 Rao, J. Appa, 2027 Raphael, Ralph A., 1823 Raphael, Richard A., 1677 Raso, Angel Garcia, 1711 Ratcliffe, Andrew J., 2933 Ratcliffe, Arnold H., 1473, 1477, 2009, 2013 Ravenscroft, Paul, 1823 Ravenscrott, Paul, 1823 Raychaudhuri, Swadesh R., 611 Raynor, Clive M., 1773 Read, Gordon, 2287 Rechka, Josef A., 803, 1023 Reddy, Chaganti P., 411 Reder, Anatoly S., 2533 Rees, Charles W., 1745, 2169, 2401 2491 Reese, Colin B., 2881 Reese, Paul B., 1465, 1469 Reimer, Kerry B., 2103 Resnati, Giuseppe, 2831 Reynolds, Kevin A., 3195 Ricca, Giuliana Severini, 1865 Riccio, Raffaele, 1337 Ridsdale, Craig M., 3217 Riehl, Jean-Jaques, 2291 Ripoll, Jean-Louis, 99 Ripoll, Jean-Louis, 99 Ritchie, Timothy J., 2573 Rizzacasa, Mark A., 2425 Rizzardo, Ezio, 485 Roberts, Stanley M., 549, 1401, 1685, 2927, 3387 Robertson, Graeme M., 1085 Roberson, David J., 1283 Robins, David J., 301, 1165, 1169, 1923, 3275 Robinson, Andrew G., 991 Robinson, Cecil H., 3239 Robinson, Cecil H., 3239 Robinson, John A., 53, 1719, 3059, 3183, 3195 Roche, Eric G., 2415 Rodios, Nestor A., 3233 Rodrigo, Russell, 3169 Rodriguez, José-Gonzalo, 3243 Rohrer, Christian, 1729 Rojatkar, Supada R., 157 Ronchetti, Fiamma, 3353 Roos, Gregory H. P., 1425 Roux, David G., 1227, 1325 Roveri, Oscar A., 1551 Row, Tayur N. Guru, 657 Rubiera, Covadonga, 3113 Ruse, Margareta, 733 Russo, Giovanni, 3353 Russo, Giovanni, 3353 Ruveda, Edmundo A., 2323 Rzepa, Henry S., 803, 809, 1023 Saha, Bijali, 939 Sainsbury, Malcolm, 2933, 2945 Saka, J. D. Kalenga, 1509 Sakaguchi, Akira, 725 Sakai Shizuyoshi 1660 Sakaguchi, Akira, 725 Sakai, Shizuyoshi, 1669 Sakamoto, Masami, 1353, 2203 Sako, Magoichi, 2227 Sakurada, Eri (née, Kawanabe), 2377, 2387 Sakurai, Osamu, 2335 Salazar, José A., 3255 Saleh, Samir, 2821 Salvadori, Severo, 1645 Samii, Zakaria K. M. Abd El, 2509, 2517, 2523 Sammes, Michael P., 161, 899

Sammes, Peter G., 111, 2585, 3037, 3223, 3229 Sandhu, Jagir Singh, 607 Sandström, Jan, 2085 Sankawa, Ushio, 2407 Sannicolò, Franco, 2721 Sarfati, S. Robert, 707 Sargent, Melvyn V., 2425 Sarkar, Manjusha, 1489 Sarma, Jagarlapudi A. R. P., 2751 Sasaki, Tadashi, 719 Sasaki, Takuma, 2403 Satake, Kyosuke, 3307 Sato, Kikumasa, 3029 Sato, Kohichi, 2429 Sauter, Fritz, 1933 Sawayama, Tadahiro, 1013 Sawitzki, Gisela, 373 Sawitzki, Gisela, 575 Saxton, Helen M., 1599 Scarpati, Rachele, 1699 Schaeffer, Corinne, 3285 Scheeren, Hans W., 2315 Scheinmann, Feodor, 2993 Schweda, Elke, 2729 Scolastico, Carlo, 1865 Scopes, David I. C., 2933, 2945 Scott, A. Ian, 365 Scott, Ronald, 1357, 1365 Scrimin, Paolo, 43 Seabury, Mark J., 251, 255 Seckington, Joanna J., 255 Seckington, Joanna K., 2305 Seela, Frank, 697 Seko, Takuya, 575 Seliki-Muruumu, John, 1759 Selwood, David L., 471 Selwood, David L., 471 Seo, Shujiro, 2407 Seres, Péter, 1875 Servi, Stefano, 3061 Seto, Haruo, 2407 Setti, Eduardo L., 1551, 2059 Shah, Pritom, 1407, 3249 Shah, Virendra P., 3103 Shamji, Amin, 2791 Shannon, Patrick V. R., 1527 Sharma, Perveen, 2537 Shaw, Gordon, 2541 Shaw, Janet, 2287 Shaw, Janet, 2287 Sheldrake, Gary N., 3275 Shen, Yanchang, 2855 Sheng, Zhi-Chu, 1577 Shepherd, Michael K., 961 Shepherd, Robert C., 2887, 2895 Shibutani, Mitsuo, 395 Shimizu, Hiroshi, 1209, 1885, 2271 Shimizu, Naoto, 439 Shimizu, Naoto, 439 Shimoura, Nobuhiro, 1993 Shingu, Tetsuro, 379 Shinkai, Seiji, 313, 1431 Shiwaku, Sohgo, 1869 Simig, Gyula, 1135 Singab, Farrag, 133 Singh, Laitonjam W., 2365 Škarić, Vinko, 2681 Skelton, Brian W., 1003 Skowrońska, Aleksandra, 2197 Slawin, Alexandra M. Z., 1773 Skowronska, Aleksandra, 2197 Slawin, Alexandra M. Z., 1773 Smale, Terence C., 2865 Smith, Andrew D., 2933, 2945 Smith, Cecil R., 2037 Smith, Clive A., 2745 Smith, David M., 681, 691, 1939 Smith, Vaith, 77 Smith, Keith, 77 Smith, Kevin M., 2443, 3119 Smith, Neil M., 2501 Snyckers, Friedrich O., 2625 Soai, Kenso, 415 Söderholm, Svante, 2095

Sohár, Pál, 2905 Sohoni, Jayant S., 157 Solomon, David H., 485 Sood, Gulshan R., 3183 Spagnolo, Piero, 1859, 2615, 3375 Spilling, Christopher D., 2033 Spitzner, Dietrich, 373 Spurden, William C., 61 Stapleton, Alan, 1677, 1685 Stapleton, Alan, 1677, 1685 Stark, W. Marshall, 1187 Starý, Ivo, 2297 Staunton, James, 747, 755, 763, 769, 773 Steele, John. 1765 Steele, Robert W., 663, 675 Steenkamp, Jacobus A., 1227, 1325, 2179, 2567, 3323, 3331 Stephenson, G. Richard, 2069 Stephenson, Les, 549 Stevenson, David E., 2043 Stevenson, Paul, 1357, 1365 Stewart, Jeffery M., 1305, 1845 Steynberg, Jan P., 37, 3323, 3331 Stipa, Pierluigi, 3067 Stirling, Charles J. M., 1695 Stöcklin, Gerhard, 779 Stocklin, Gernard, 779 Stoodley, Richard J., 1765, 1773, 2259, 2813, 3359 Street, Jonathan D., 1705 Stud, Manfred, 1271 Stuhmiller, Louise M., 2161 Suárez, Ernesto. 3255 Suckling, Colin J., 3175 Sudo, Yuka, 2309 Suga, Takayuki, 1629 Sugimoto, Akira, 2579 Sugino, Eiichi, 2429 Suginome, Hiroshi, 321, 491 Summersell. Richard J., 2595, 2603 Sumoto, Kunihiro, 1057 Sunter, David C., 747 Surendrakumar, Sivagnanasundram, 2693, 2703 Suschitzky, Hans, 227, 983, 991, 1933 Sutherland, Ian O., 13 Sutherland, James K., 663, 675, 1599 1599 Sutton, Kevin H., 1481 Suzuki, Masashi, 1289 Suzuki, Takanori, 719 Světlik, Jan, 2053 Swain, Christopher J., 85, 471 Szabó, Ladislas, 707, 2243 Taber, Douglass F., 2821 Taga Tooru, 2555 Taga, Tooru, 2555 Takahashi, Kazufumi, 1869 Takahashi, Tamiko, 2653 Takahashi, Toshie, 1897 Takase, Shigehiro, 2387 Takayanagi, Hiroaki, 1885 Takayema, Hiromitsu, 3133 Takeda, Ken'ichi, 2407 Takeda, Yoshio, 379 Takeuchi, Hiroshi, 521, 2277 Takeuchi, Hisato, 2149 Takeuchi, Tatsuo, 415 Takeuchi, Tsuneo, 415 Takeuchi, Yoshio, 1149

Takeuchi, Yoshito, 1173 Tal, Beni, 1283 Taljaard, Heinrich C., 2663 Tamura, Toshitake, 439 Tanabe, Masato, 587 Tanaka, Hirokazu, 2387 Tanaka, Michiyo, 1353 Tanaka, Mihoko, 2555 Tanaka, Mihoko, 2555 Tanaka, Shinri, 1541 Tanaka, Toshihiro, 2955 Taniguchi, Nobuaki, 1277 Tanikaga, Rikuhei, 2397 Tanimoto, Shigeo, 411 Tashiro, Masashi, 179, 327, 1869 Tatemitsu, Hitoshi, 385 Tavale, Sudam S., 157, 657 Teague, Simon J., 1077 Tebby, John C., 175 Tellado, Fernando G., 105, 1451 Tellado, Fernando G., 105, 1451 Templeton, John F., 1961 Temprano, Fernando, 3243 Tendler, Saul J. B., 2903 Terao, Keiji, 2113 Tezuka, Yasuhiro, 2335 Thang, San H., 485 Thetford, Dean, 111, 3229 Thianpatanagul, Sunit, 949, 2693 Thiericke, Ralf, 2123 Thomas, Abraham, 169 Thomas, Eric J., 2305 Thomas, Eric J., 2305 Thomas, Susan E., 2091 Thomas, W. Anthony, 61 Thompson, Elizabeth A., 2881 Thomson, Andrew J., 2453 Thomson, Gordon A., 3037 Thomson, Ronald H., 407, 583 Threadgill, Michael D., 2903 Thuillier, André, 99 Tikdari, Ahmad M., 1659 Tinker, Alan C., 1837 Tisdale, Michael J., 2903 Toczek, Judy, 1397, 1401 Toczek, Judy, 1397, 1401 Todesco, Paolo E., 971, 3281 Tohnishi, Masakazu, 2203 Tojo, Gabriel, 2491 Tokoroyama, Takashi, 445 Tokunaga, Naoko (née, Nakajima), 2921 Toma, Lucio, 3353 Tomatis, Roberto, 1645 Tomishi, Tetsuo, 2227, 2233 Tomotake, Atsushi, 151 Tong, Brian P., 61 Toru, Takeshi, 575 Toselli, Maurizio, 1859 Toshimitsu, Akio, 2113 Townsend, Craig A., 839 Toya, Tetsuya, 2433 Toyota, Masahiro, 1155 Tozawa, Machiko, 2037 Trazza, Antonio, 3067 Trethewey, Andrew N., 1173, 1913 Tricker, Jane Y., 3097 Trigalo, François, 2243 Tripathy, Pradeep K., 1659 Truneh, Almaz, 1461, 1465, 1469, 2001, 2005 Tsiliopoulos, Efthimios, 2805 Tsubuki, Masayoshi, 193, 1503, 2433 Tsukamoto, Sachiko, 787, 2621,

2625

Tsunetsugu, Josuke, 1541 Tsyryapkin, Vladimir A., 2075 Tuchinda, Patoomratana, 1255 Tuddenham, David, 3103 Tureček, František, 2053, 2297 Turner, Alan B., 1653, 3059 Turner, David L., 1719, 3059 Turner, Simon P. D., 1557, 1577 Udagawa, Shun-ichi, 1689, 2155, 2607 Ueda, Koji, 2433 Ueda, Shōzō, 1013 Ueda, Shozo, 1015 Uemura, Sakae, 2113 Ueno, Yoshio, 575 Ugliengo, Piero, 461 Uhl, Helmut, 983 Unger Per 1183 Unger, Per, 1183 Uno, Hitoshi, 1013 Uomori, Atsuko, 2407 Valerio, Robert M., 2887 Van Binst, Georges, 3071 van Leersum, Philip T., 1653, 3059 van Niel, Monique B., 269 Varvoglis, Anastassios, 2839 Vašíčková, Soňa, 2297 Vasvári-Debreczy, Lelle, 2019 Vercesi, Dina, 417 Vernon, John M., 2141 Viola, Franca, 461 Vipond, David, 2693, 2703 Vishwakarma, Jai Narain, 169 Visser, Gerard W. M., 1203, 2547 2547 Vitt, Sergei V., 305 Vivona, Nicolò, 1313 Vong, Kuok K., 2945 Voyle, Martyn, 3229 Wadsworth, Harry J., 1473 Waiss, Jr., Anthony C., 711 Wakao, Kozo, 189 Wakefield, Basil J., 227, 3301 Walkinshaw, Malcolm D., 36 Walkinshaw, Malcolm D., 365 Wallace, Paul, 2971 Ward, Robert S., 1603, 1613 Waring, Anthony J., 1791 Warren, Stuart, 1799, 2971 Watanabe, Mituaki, 3155 Watanabe, Shigeru, 1829 Watanabe, Shoji, 2203 Watanabe, Toshiko, 3005 Watson, Martin C., 1425 Watson, Thomas R., 1851 Wazeer, Mohammed I. M., 597 Weakley, Timothy J. R., 3391 Wear, Trevor J., 663 Webster, Nigel M. H., 471 Weedon, Basil C. L., 1371, 1383, 1389 Watanabe, Mituaki, 3155 1389 Weeratunga, Gamini, 3169 Wehler, Thomas, 1183 Weidmann, Hans, 1729 Weisleder, David, 2037 Westermann, Bernhard, 697 Westwood, Donald, 269 Whalley, Anthony J. S., 823 Whitcombe, Ian W. A., 61 White, Allan H., 1003, 1845, 3209 Whitham, Gordon H., 813, 817 Widdowson, David A., 569, 1317 Williams, Carrell H., 1051

3331 3339 Zani, Paolo, 1499 Zeeck, Axel, 2123

Williams, D. Lyn H., 251, 255 Williams, David J., 1023, 1773 Williams, Dudley H., 1949 Williamson, Michael P., 1949 Willis, Christine L., 1455, 1983 Wilson, Hilary A., 2541 Wolford, Lionel T., 2137 Wood, Hamish C. S., 3175 Wood, William W., 999 Wong, Rosalind Y., 711 Wright, J. Neville, 2043 Wright, Stanley H. B., 351 Wu, Wen-Yang, 183 Wyatt, Paul G., 2757 Wyatt, Paul G., 2757 Yamada, Akira, 189 Yamada, Naoyuki, 2309 Yamada, Shinji, 321 Yamaguchi, Takamichi, 1787 Yamaguchi, Toshiro, 313 Yamamoto, Koji, 395 Yamamoto, Masatoshi, 3133 Yamamoto, Yohsuke, 725 Yamano, Junzo, 2579 Yamashita, Asami, 2913 Yamashita, Asami, 2913 Yamazaki, Chiji, 1897 Yamazaki, Masuo, 415 Yamazaki, Mikio, 2611 Yamazaki, Takao, 2653 Yanada, Reiko, 2555 Yanagihara, Kazuhiro, 395 Yanagihara, Kazuhiro, 39 Yang, Chun-Shu, 1537 Yang, Zhen-Yu, 563 Yano, Yumihiko, 1813 Yasueda, Masahiro, 2579 Yasumoto, Takeshi, 1337 Yatagai, Masanobu, 1787 Yeoh, Boon Leng, 1477, 2013 Yokota, Noriko, 415 Yokoyama, Masataka, 2309 Yoneda, Fumio, 1809, 1813, 2335, 2555 Yoneda, Dr. 11, 2001 Yoneda, Ryuji, 3163 Yoneda, Shigeo, 2579 Yonemitsu, Osamu, 2913 Yonemitsu, Tadashi, 1869 Yoneyama, Yoshiharu, 385, 395 York, David C., 69 Yorke, Selwyn C., 2459, 2469, 2477 Yoshida, Hiroshi, 725 Yoshida, Katsuhira, 2439 Yoshida, Katsuhira, 2439 Yoshida, Tohru, 1431 Yoshida, Toyokichi, 1013 Yoshimura, Yohko, 2407 Youds, Peter, 549 Young, Desmond A., 2567, 3323, Yukawa, Hirotaka, 833 Yus, Miguel, 981, 1029, 3113, Yuyama, Mari, 2155 Zajiček, Jaroslav, 2297 Zanirato, Paolo, 2615, 3375 Zanotti, Giancarlo, 2647 Zeglam, Talal Hasan, 1961 Zhang, Xiumin, 2423 Zhao, Cheng-Xue, 563 Zimmerman, Steven C., 1577 Zubovics, Zoltan, 1033 Zwaagstra, Oene, 2547

### SUBJECT INDEX, 1988

#### AAPTAMINE

- Total synthesis of aaptamine of potent a-blocking activity via thermal cyclization of 1-azahexatriene systems, 2429-32 ABIETANE
- Total synthesis of  $(\pm)$ -pisiferic acid, 931-8 ACEPLEIADYLENE
- Synthesis and properties of cyclohepta[/g]naphth[2,3-a]acenaphthylene-5,12-dione (naphth[2,3-h]acepleiadylene-5,12dione), 1541-6
- ACETAL
- Chemistry of bis-spiroacetals. Synthesis of the 1,6,8-
- trioxadispiro[4.1.5.3]pentadecane ring system, 125–32 Polarized ketene S,S- and S,N-acetals. Part 52. Lead tetra-acetate oxidation of 3-anilino-3-methylthio-2-arylacrylonitriles. A novel approach to substituted indoles., 169-74
- Reactions of trimethylsilyl ketene acetals with benzoyl cyanide and with α-keto esters, 411–4 ACETATE
- Novel base-induced reactions of substituted (1,2-benzisoxazol-3yl)acetates, 1013-22
- Chemistry of novel compounds with multifunctional carbon structure. Part 3. Synthesis of a-azido-a-fluoro-a-(phenylthio and ethylthio)acetates, 1149-54
- Palladium(n)-catalysed rearrangements of allylic acetates in the syntheses of methyl (10*E*,12*Z*)-9-hydroxyoctadeca-10,12-dienoate (a-dimorphecolate) and (2E,4Z)-deca-2,4-dienal, 2061-8

#### ACETOPHENONE

- Preparation of deuteriated 1-phenylethanols by reductive dehalogenation of the corresponding halogenoacetophenones with Raney alloys in an alkaline deuterium oxide solution, 179-
- ACETOXYMETHYLATION
- Structural studies on bioactive compounds. Part 7. The design and synthesis of  $\alpha$ -substituted serines as prospective inhibitors of serine hydroxymethyltransferase, 2903–4

ACETYLEŇE

- 1,3-Dipolar character of six-membered aromatic rings. Part 56. The cycloadditions of acetylenes and 3-oxidopyridinium betaines, 917-20
- Stereoselective addition of lithium amides to activated triple bonds, 927 - 30
- Allenes. Part 47. Pyrido[1,2-a]pyrimidines and their hydrolysis products from allenic and acetylenic nitriles, 975-80
- Rhodium-catalysed [2 + 2 + 2]-cycloadditions of acetylenes, 1357-64

### ACETYLENIC ALCOHOL

Enantiospecific synthesis of the spiroacetal moieties of avermectins A<sub>1b</sub>, B<sub>1b</sub>, A<sub>1a</sub>, B<sub>1a</sub>, A<sub>2b</sub>, B<sub>2b</sub>, A<sub>2a</sub>, and B<sub>2a</sub> and milberrycins  $\alpha_7$ and  $\alpha_8$ , 85–98 ACETYLENIC HEMIACETAL

- Chemistry of bis-spiroacetals. Synthesis of the 1,6,8-
- trioxadispiro[4.1.5.3]pentadecane ring system, 125–32 ACETYLENIC NITRILE
- Allenes. Part 46. Synthesis of 1,2-dihydro-4H-3,1-benzoxazines, 4H-3,1-benzoxazines, and 3-cyanoquinolines from allenic and acetylenic nitriles, 277-82

#### ACID CATALYSED REARRANGEMENT

- Acid-catalysed rearrangements of steroid alkenes. Part 1. Rearrangement of  $5\alpha$ -cholest-7-ene, 1065–70
- Acid-catalysed rearrangements of steroid alkenes. Part 2. A reinvestigation of the backbone rearrangement of cholest-5-ene, 1071-6

#### ACID CATALYSIS

- Acid-catalysed terpenylations of olivetol in the synthesis of cannabinoids, 1243-50
- Synthesis of cannabinoids carrying  $\omega$ -carboxy substituents: the cannabidiols, cannabinol and  $\Delta^1$  and  $\Delta^6$ -tetrahydrocannabinols of this series, 1255-62
- Reactivity of malononitrile towards sulphamide and N-substituted sulphamides: synthesis and hydrolysis reactions of 3,5-diamino-1,2,6-thiadiazine 1,1-dioxides, 1271-6

#### ACONITUM ALKALOID

- Stereocontrolled synthesis of the CDF part of *Aconitum* alkaloids via intramolecular double Michael reaction, 1155–64 ACRYLONITRILE
- Polarized ketene S,S- and S,N-acetals. Part 52. Lead tetra-acetate oxidation of 3-anilino-3-methylthio-2-arylacrylonitriles. A novel approach to substituted indoles., 169–74
- ACYCLONUCLEOSIDE
  - Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 1. Substitutions on C-2' of the acyclic N-9 substituent, 2757-66
  - Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 2. Substitutions of C-1' and C-3' of the acyclic N-9 substituent, 2767-76
- Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 3. Modification of a 3'hydroxymethyl group, 2777–84 ACYLATION

- Photocyclisation of enamides. Part 27. Total syntheses of  $(\pm)$ yohimbine  $(\pm)$ -alloyohimbine, and  $(\pm)$ -19,20-
- didehydroyohimbines, 2219–26 Synthesis and acetylation of naphthols as precursors to naturally derived naphthoquinones; crystal structure of the aphin-related 7-O-methyl Quinone A, 2459-68
- Purines, pyrimidines, and imidazoles. Part 64. Alkylation and acylation of some aminoimidazoles related to intermediates in purine nucleotide de novo and thiamine biosynthesis, 2541-6
- Acyl transfer reactions with phosphine oxides: synthesis of Ehomoallylic alcohols, cyclopropyl ketones, and  $\gamma$ -hydroxy ketones, 2971-8
- ACYLOIN
- Intramolecular ene reaction of the unsaturated acyloin 3-(but-3enyl)-2-hydroxy-3-methylcyclohexanone, 2033–6 ACYL TRANSFER REACTION

Acyl transfer reactions with phosphine oxides: synthesis of Ehomoallylic alcohols, cyclopropyl ketones, and  $\gamma$ -hydroxy ketones, 2971–8 ADAMANTANE

Synthesis of novel carbo- and hetero-polycycles. Part 8. An efficient and convenient synthesis of adamantylidenevinylidenecyclopropane derivatives, 1047–50 ADAMANTYL ASPARTATE

- Amino acids and peptides. Part 19. Synthesis of  $\beta$ -1- and  $\beta$ -2adamantyl aspartates and their evaluation for peptide synthesis,
- 2129-36 ADDITION

Regioselective synthesis of hydroxy sulphides via trifluoroacetoxysulphenylation of derivatives of allylic alcohols, 2509-16

- ADENINE
- Syntheses and properties of some polymethylene bridged adenines, 593-6

### ADENINE TRIPHOSPHATE

Synthesis of conjugates of 11α-hydroxyprogesterone with βnicotinamide adenine dinucleotide ( $\beta$ -NAD) and adenosine triphosphate (ATP), 2983-92

ADIABATIC PHOTOREACTION

Synthesis and photochemistry of 3,6-difluoro-10,11-benzopentacyclo[6,4,0.0<sup>2,7</sup>,0<sup>3,12</sup>.0<sup>6,9</sup>]dodeca-4,10-diene, 3307-10 AFLATOXIN

- Synthesis of averufin and its role in aflatoxin B1 biosynthesis, 839-
- ALCOHOL
- A mild method for the conversion of 1,3-glycols into unsaturated alcohols, 2013-8
- Ready oxidation of alcohols to carbonyl compounds by sodium bromite in methylene dichloride in the presence of aluminium oxide, 2423-4 ALDEHYDE

Unsaturated carboxylic acid polyenolates. Lithium trienolate of

#### ALDEHYDE (contd)

- sorbic acid as a  $d^6$  synthon: addition to ketones and unsaturated ketones, 2797-804  $\beta$ -Hydroxy ketones from the iodine-catalysed reaction of  $\alpha$ -bromo
- ketone with aldehydes mediated by trialkylstibine, 2855-60 ALDOL REACTION
- Aldol reaction of reducing sugars. Convenient stereoselective synthesis of ribofuranosylacetone and chiral dienones, 2861-4 ALDÓSE
- Synthesis of ketofuranosides by epoxidation-ring closure of enol ethers, 3353-8
- ALDOSE REDUCTASE

Spirocyclic β-oxo sulphoxides and sulphones as potential aldose reductase inhibitors, 3217-22

#### ALKALOID

- A new route to 1-oxygenated carbazoles. Synthesis of the carbazole alkaloids murrayafoline-A and murrayaquinone-A, 235-40
- Synthesis of the carbazole alkaloid murrayaquinone-B, 241-6 A new precursor to 3,4-didehydropyridine, and its use in the
- A new precursor to 5,4-challengeropytholymate, and its use in the synthesis of the antitumour alkaloid ellipticine, 247–50 Application of a modified Pictet-Spengler reaction to the synthesis of optically active tetrahydro- $\beta$ -carbolines, key intermediates in the preparation of many indole alkaloids, 739–46
- A novel synthesis of pyrrolizidine alkaloids by means of an intramolecular carbenoid displacement (ICD) reaction, 833-8
- Stereocontrolled synthesis of the CDF part of Aconitum alkaloids via intramolecular double Michael reaction, 1155-64
- Total synthesis of hydrocinchonidine and hydrocinchonine via photo-oxygenation of an indole derivative, 1277-82
- Synthesis of  $(\pm)$ -nitramine and  $(\pm)$ -isonitramine, 1625–8 Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters
- of  $(\pm)$ -synthanecine A containing 12- to 16-membered rings, 1923-8
- Leurosinone: a new binary indole alkaloid from Catharanthus roseus, 2175-8
- Photocyclisation of enamides. Part 27. Total syntheses of  $(\pm)$ -
- philotocyclisation of enamides. Part 27. Total syntheses of  $(\pm)$ -yohimbine  $(\pm)$ -alloyohimbine, and  $(\pm)$ -19,20-didehydroyohimbines, 2219–26 Incorporation of  $[1,2^{-1}{}^{3}C_{2}]$ cadaverine and the enantiomeric  $[1^{-2}H]$ cadaverines into the quinolizidine alkaloids in *Baptisia* australis, 3275–80
- Antifertility agents: a synthetic entry to yuehchukene analogues; stereoselective synthesis of 7,7-bis-nor-yuehchukene via 9-methyl-6-oxo-6aβ-7,8,10aβ-tetrahydroindeno[2,1-b]indole, 3317-22

### ALKANOL

- Unusual stereoselection in the reaction of dianions derived from 1phenylsulphonylalkan-2-ols with electrophilic reagents, 2397-402 ALKENE
- Magnesium- and titanium-induced reductive coupling of carbonyl compounds: efficient syntheses of pinacols and alkenes, 1729-34
- Homogeneous hydrogenation of tetrasubstituted alkene moieties in prochiral didenydro amino acid derivatives catalysed by iridium complexes, 1881-4
- The pyridylseleno group in organic synthesis. Part 5. Amidoseleniation of alkenes, 2113–8
- Total synthesis of aaptamine of potent *a*-blocking activity via
- thermal cyclization of 1-azahexatriene systems, 2429-32
- Reactivity of phenyliodonium bis(arylsulphonyl)methylides towards alkenes and alkynes: crystal structure of 9-phenylsulphonyl-1,2,3,4,4a,9a-hexahydro-1,4-methanofluorene, 2839-46
- Acyl transfer reactions with phosphine oxides: synthesis of Ehomoallylic alcohols, cyclopropyl ketones, and  $\gamma$ -hydroxy ketones, 2971-8

Thermal fragmentation of 2-azidobenzo[b]thiophene in the presence of alkenes: a new synthetic route to 1-(2-benzo[b] thienyl)aziridines and/or thiochromans-4-carbonitriles, 3375-80 ALKENENITRILE

Synthesis of (Z)-predominant  $\alpha,\beta$ -unsaturated nitriles from enone cyanohydrin diethyl phosphates: application to the synthesis of  $(\pm)$ -nuciferal,  $(\pm)$ -(E)- and -(Z)-nuciferol, and  $(\pm)$ -manicone,

#### **ALKOXYLATION**

- Novel alkoxylations of cephalosporins by cerium(IV) salts and by electro-oxidative procedures, 1685–8 Lignans and related phenols. Part 18. The synthesis of quinones
- from podophyllotoxin and its analogues, 2573-8 ALKYLATION
- Synthesis of 2,3-dialkyl-6,7-dichloro- and 2,3-dialkyl-6,7-dibromo-1,4-naphthoquinones, 559-62

- The preparation of 3-benzyl-6-( $\alpha$ -methylbenzyl)- and 3,6-bis( $\alpha$ methylbenzyl)-s-tetrazines by alkylation of 3,6-dibenzyl-stetrazine and a study of their rearrangements to imidazo[1,2-b]s-tetrazines in alkali, 1439-46
- $2\beta$ -Isopropylidene-, 2 $\beta$ -t-butyl-, and  $2\beta$ -isopropyl-gibberellin A<sub>4</sub> and spiro[gibberellin A<sub>4</sub>-2,1'-cyclopropane], 1973-82 Alkylation of nitrocyanamide. A new synthesis of isocyanates, 2137-
- The chemistry of benzotriazole. Part 8. A novel two-step procedure for the *N*-alkylation of amides, 2339-44
- Purines, pyrimidines, and imidazoles. Part 64. Alkylation and acvlation of some aminoimidazoles related to intermediates in purine nucleotide de novo and thiamine biosynthesis, 2541-6
- Alkylation studies of 5-exo-methylene substituted isoxazolidines, 2639 - 46
- Synthesis of 2-substituted 4-pyridylpropionates. Part 2. Alkylation approach, 2791-6 ALKYLIDENEINDOLINE

- Photoreactions of indoline-2-thiones with cyanoalkenes, 1663-8 ALKYNE
- Reactivity of phenyliodonium bis(arylsulphonyl)methylides towards alkenes and alkynes: crystal structure of 9-phenylsulphonyl-,2,3,4,4a,9a-hexahydro-1,4-methanofluorene, 2839-46
- ALKÝNOÍC ACID
  - Diels-Alder reactivity of pyrano[3,4-b]indol-3-ones. Part 3. Intramolecular Diels-Alder reactions, 3249-54
- ALLAMANDIN
  - A total synthesis of allamcin. An approach to antileukaemic iridoid lactones and formal syntheses of plumericin and allamandin, 1119-34
- ALLAMCIN
- A total synthesis of allamcin. An approach to antileukaemic iridoid lactones and formal syntheses of plumericin and allamandin, 1119 - 34
- ALLENE
  - Allenes. Part 46. Synthesis of 1,2-dihydro-4H-3,1-benzoxazines, 4H-3,1-benzoxazines, and 3-cyanoquinolines from allenic and acetylenic nitriles, 277-82
  - Allenes. Part 47. Pyrido [1,2-a] pyrimidines and their hydrolysis products from allenic and acetylenic nitriles, 975-80
  - Allenes. Part 48. A new general method for the synthesis of dihydro-4H-1,4-thiazines, 1759-64
  - Alkylation studies of 5-exo-methylene substituted isoxazolidines, 2639–46
- ALLENEDICARBOXYLIC

Cyclophilic reactions of allene-1,3-dicarboxylic ester. Part 7. Synthesis of bicyclic and tricyclic heterocyclic compounds involving nitrogen, sulphur, and carbon as nucleophiles, 2993-3004

- ALLENIC NITRILE
- Allenes. Part 46. Synthesis of 1,2-dihydro-4H-3,1-benzoxazines, 4H-3,1-benzoxazines, and 3-cyanoquinolines from allenic and acetylenic nitriles, 277-82
- ALLIACOLIDE
  - Radical additions onto enols and enol ethers as a stratagem in synthesis. Total synthesis of the unique epoxy-lactone  $(\pm)$ alliacolide found in Marasmius alliaceus, 1107-18
- ALTERNIA HELIANTHI
  - Studies on the mechanism of polyketide-derived biosynthesis of deoxyradicinin and related metabolites of Alternaria helianthi, 1283-8
- ALUMINIUM
  - Reaction of isoxazoles and isoxazolium salts with organometallic reagents. Synthesis of dihydroisoxazoles, 791-4 Cyclodehydration of non-aromatic diols on Al<sup>III</sup>-montmorillonite
  - clay: reactivity and mechanism, 1749-52
- ALUMÍNIUM OXIDE
  - Ready oxidation of alcohols to carbonyl compounds by sodium bromite in methylene dichloride in the presence of aluminium oxide, 2423-4
- **AMBERLYST 15**

Amberlyst 15, a superior, mild, and selective catalyst for carbonyl regeneration from nitrogeneous derivatives, 2563-6

- AMIDE
  - Chemistry of 2-bromo-2-methylpropanamides. Synthesis and solvolytic behaviour of oxazolidinones and spiro-oxazolidinones,
  - Synthetic methods. Part 23. Rearrangement of some hydroxamic

#### AMIDE (contd)

- acids into amides. A self-condensation leading to disproportionation, 733-8
- The chemistry of benzotriazole. Part 8. A novel two-step procedure for the N-alkylation of amides, 2339-44
- New routes to heterocycles via sulphenylation of unsaturated amides, 2517-2
- AMIDO ALCOHOL
  - Asymmetric conjugate addition to unsaturated chiral amido alcohols using Grignard reagents co-ordinated with tertiary amines or DBU. Preparation of optically active 3-substituted carboxylic acids and (S)-(-)-citronellol, 415-6
- AMIDOSELENIATION

The pyridylseleno group in organic synthesis. Part 5. Amidoseleniation of alkenes, 2113-8

- AMINAL
- Preparation of N,O-aminals as synthetic equivalents of  $H_2C=NAr$ and  $(H_2C=NHAr)^+$  ions: neutral- and acid-promoted transformations, 1631–6
- AMINATION
- Synthesis of (L)-daunosamine and related amino sugars, 111-24 Syntheses and alkaline hydrolyses of 2,2'-imino- and 2,2 (substituted imino)-1-(2'-deoxy-β-D-arabinofuranosyl)uracils, 2955-62
- AMINE
- Reactions of 3-bromo-2,3-dihydro- and 2,3-dibromo-4H-1-
- benzothiopyran-4-one 1,1-dioxides with various amines, 1829-36 AMINO ACID
- Regioselective chlorination of valine derivatives, 259-64
- Regioselective formation of amidocarboxy-substituted free radicals, Ž65–8
- General method for the asymmetric synthesis of  $\alpha$ -amino acids via alkylation of the chiral nickel(11) Schiff base complexes of glycine and alanine, 305-12
- Amino alcohols as C-terminal protecting groups in peptide synthesis, 535-40
- X=Y-ZH Systems as potential 1,3-dipoles. Part 9. Aza-allyl anion precursors from the reaction of (1,3-dioxoindan-2ylidene)malononitrile with x-amino acids and their methyl esters, 541-4
- Thioesters of amino acid derivatives as thioacylating agents in thiopeptide synthesis, 1051-6
- Synthesis and reaction of optically active morpholinones, 1521-6 Allenes. Part 48. A new general method for the synthesis of
- dihydro-4H-1,4-thiazines, 1759-64
- Homogeneous hydrogenation of tetrasubstituted alkene moieties in prochiral didehydro amino acid derivatives catalysed by iridium complexes, 1881-4
- Amino acids and peptides. Part 19. Synthesis of  $\beta$ -1- and  $\beta$ -2adamantyl aspartates and their evaluation for peptide synthesis, 2129-36
- Stereo-structures of reaction products of thymidine epoxides with amines and L-amino acid ethyl esters, 2555-62 X=Y-ZH Systems as potential 1,3-dipoles. Part 12. Mechanism of
- formation of azomethine ylides via the decarboxylative route from ∝-amino acids, 2703–14 Peptide synthesis. Part 12. 3,4-Dihydro-4-oxo-1,2,3-benzotriazin-3-
- yl esters of fluorenylmethoxycarbonyl amino acids as selfindicating reagents for solid phase peptide synthesis, 2887-94
- Peptide synthesis. Part 13. Feedback control in solid phase synthesis. Use of fluorenylmethoxycarbonyl amino acid 3,4dihydro-4-oxo-1,2,3-benzotriazin-3-yl esters in a fully automated system, 2895-902
- Asymmetric synthesis of L-[3-<sup>11</sup>C]alanine and L-[3-<sup>11</sup>C]-phenylalanine by a phase-transfer alkylation reaction, 3081-4 Latent inhibitors. Part 4. Irreversible inhibition of dihydro-orotate dehydrogenase by hydantoins derived from amino acids, 3175-82
- Both-faces hindered porphyrins. Part 5. Synthesis and characterization of iron(iii) basket handle porphyrins having
- multiple secondary amide groups inserted in the superstructures, 3285-96 AMINO ALCOHOL
  - Amino alcohols as C-terminal protecting groups in peptide synthesis, 535-40
- Synthesis and reaction of optically active morpholinones, 1521-6 AMINOALKENENITRILE
- Nucleophilic reactions of x-aminoalkenenitriles, 1945-8 AMINOBENZOIC ACID
- Studies of precursor-directed biosynthesis with Streptomyces sp.

Part 1. Isolation of manumycin analogues by feeding of aminobenzoic acids as C7N starter units, 2123-8

- AMINOBIPHENYL
- Sulphur nitride in organic chemistry. Part 17. Preparation of 1,8diaminocarbazole, 1869–74
- AMINO CARBOXAMIDE
- Enantioselective synthesis of (3S)-trans-4-(substituted methyl)monobactams from 2,3-O-isopropylidene-Dglyceraldehyde, 649-56
- AMINOLYSIS
- Convenient synthesis of mixed anhydrides by the ozonolysis of oxazoles, 529-34
- AMINO NITRILE
- Enantioselective synthesis of (3S)-trans-4-(substituted methyl)monobactams from 2,3-O-isopropylidene-D-
- glyceraldehyde, 649–56 AMINO NUCLEOSIDE
- Preparation of 4'-amino hexopyranose nucleosides from keto nucleosides. An approach to amino nucleoside antibiotics, 1219-26 AMINO SUGÁŘ
- Synthesis of (L)-daunosamine and related amino sugars, 111-24 AMINOTHIETANE
- Photoreactions of indoline-2-thiones with cyanoalkenes, 1663-8 AMPHIMEDON
- Biosynthesis of diisocyanoadociane, a novel diterpene from the marine sponge Amphimedon sp. crystal structure of a monoamide derivative, 1003-12
- ANAMARIN
- Synthesis of the 5,6-dihydro-2-pyrone moiety of (+)-anamarin, 2291-6
- ANDROSTANE
  - Synthesis of 13a-steroids. A new route to 16-substituted 13aandrostanes, 23-30
  - Molecular rearrangement of 3-substituted 4-chloro-4,5-epoxide systems in ring  $\tilde{A}$  of steroids, 1961–72
- ANDROSTENE
  - Aromatization of 7β,17β-diacetoxy-4-methyleneandrost-5-ene, 1461-
  - Stereochemistry of epoxidation of some A-norandrost-5-enes, 1473-6
  - Boar taint steroid derivatives for immunological studies. Synthesis of 11x-hydroxy-5x-androst-16-en-3-one and its hemisuccinate, 3059-8
- ANDROSTENEDIONE
- Syntheses of  $2\alpha$  and  $2\beta$ -deuterio-testosterones and -androst-4-ene-3,17-diones, 2027-32 ANDROSTENONE
- Stereochemistry of hydroboronation and osmylation of 3x,5cycloandrost-6-en-17-one, 1465-8
- Structure-reactivity relationships in normal and 19-nor-5,10-secosteroidal cyclodecenone systems. Part 1. Acid-catalyzed and thermal reactions, 1495-8
- Boar taint steroid derivatives for immunological studies. Synthesis of 11x-hydroxy-5x-androst-16-en-3-one and its hemisuccinate, 1653-8
- ANDROSTERONE

Steroidal allylic and homoallylic rearrangements during halogenation with triphenylphosphine and carbon tetrachloride, 1469-72

- ANHYDRIDE
  - Convenient synthesis of mixed anhydrides by the ozonolysis of oxazoles, 529-34
  - Chiroptical properties and molecular geometry of substituted succinic anhydrides and imides, 629-38
  - Circular dichroism spectra and molecular geometry of sixmembered ring anhydrides and imides, 639-48
- ANILINE
  - o-Nitroaniline derivatives. Part 9. Benzimidazole N-oxides unsubstituted at N-1 and C-2, 681-90
  - o-Nitroaniline derivatives. Part 10. 5- and 6-Amino-1Hbenzimidazole 3-oxides, 691-6
  - o-Nitroaniline derivatives. Part 11. 4- and 7-Amino-1Hbenzimidazole 3-oxides, 1939-44
- ANIONIC COMPLEX
- Macrocyclic and macropolycyclic compounds based upon 1,3disubstituted propane units, 13-22
- ANNULENE
  - Synthesis and properties of methano-bridged tetradehydro-[26]-, -[28]-, -[30]-, -[32]-, -[34]-, and -[38]-annulene, 385--94

- **ANNULENE** (contd)
- Synthesis and properties of methano-[12]-, -[18]-, -[20]-, -[22]-, -[24]-annulene and dimethano-[20]- and -[24]-annulene, 395-400
- ANNULENEDIONE
- Synthesis and properties of cyclohepta[fg]naphth[2,3a]acenaphthylene-5,12-dione (naphth[2,3-h]acepleiadylene-5,12dione), 1541-6
- ANODIC OXIDATION

#### Radical cations. Part 2. Oxidative dimerization of indolizines: a chemical and electrochemical investigation, 3067-70

### ANOMERIZATION

Stereochemical features of the anomerizations in the 5,6dihydrothymine nucleoside series, 2681-6

#### ANSAMYCIN

The ansamycins: synthesis of the naphthoquinonoid nucleus of ifamycin W; crystal structure verification of a key naphthalenic intermediate, 2477-84

### ANTIAROMATIC

Photochemical and thermal reactions of heterocycles. Part 5. Products via transient quasiantiaromatic azetine intermediates generated by desulphurisation of photochemical intermediates from a thiazolium-4-olate and 4-aminothiazolium salts, 189-91

#### ANTIBIOTIC

An efficient route to triene synthons for putative intermediates in polyether antibiotic biosynthesis, 53-60

Synthesis of (L)-daunosamine and related amino sugars, 111-24 Simple and condensed  $\beta$ -lactams. Part 9. Elaboration of the 3-(1-

- hydroxyethyl) side chains of potential intermediates of carbapenem antibiotics via the 2-methyl-1,3-dioxolan-2-yl group,
- 1135-42 Synthesis of 9a-deoxymitomycin congeners, 1143-8
- Preparation of 4'-amino hexopyranose nucleosides from keto nucleosides. An approach to amino nucleoside antibiotics, 1219-26
- Chiral synthesis of 3-[(R)-1-hydroxyethyl]-4-oxoazetidin-2-yl acetate using an asymmetric 1,3-dipolar cycloaddition reaction, 1593-8
- Biosynthesis of the macrotetrolide antibiotics; the incorporation of carbon-13 and oxygen-18 labelled acetate, propionate, and succinate, 1719-28
- Structure elucidation of a glycopeptide antibiotic, OA-7653, 1949-56
- Studies of precursor-directed biosynthesis with Streptomyces sp. Part 1. Isolation of manumycin analogues by feeding of aminobenzoic acids as  $C_7N$  starter units, 2123-8

Biosynthesis of streptothricin F. Part 6. Formation and intermediacy of D-glucosamine in Streptomyces L-1689-23, 2283-

Synthesis of  $\gamma$ -lactam analogues of carbapenems with substituted-thio groups at the C-3 position, 2345–52

Formal synthesis of the antitumor antibiotic CC-1065, 2491-500

- Synthetic studies on bicyclomycin and its analogues. Part 1. Synthesis of substituted 2-oxa-8,10-diazabicyclo[4.2.2]decanes, 2585-94
- Synthetic studies on antibiotic validamycins. Part 12. Total synthesis of (+)-validamycin B and (+)-validoxylamine B, 2675-80
- Biosynthesis of the macrotetrolide antibiotics; the incorporation of carbon-13 and oxygen-18 labelled acetate, propionate, and succinate, 3059-60
- Biosynthesis of the polyether antibiotic monensin-A. Results from the incorporations of labelled acetate and propionate as a probe of the carbon chain assembly processes, 3183-94
- Butyrate metabolism in streptomycetes. Characterization of an intramolecular vicinal interchange rearrangement linking isobutyrate and butyrate in Streptomyces cinnamonensis, 3195-208

#### ANTICANCER DRUG

- Chemistry of 6H-pyrido[4,3-b]carbazoles. Part 12. Synthesis of potential bisintercalating drugs bearing two ellipticine units, 2933–44
- Chemistry of 6H-pyrido[4,3-b]carbazoles. Part 13. Syntheses of ring-A- and ring-D-substituted ellipticines, 2945-54

#### ANTIFERTILITY AGENT

Antifertility agents: a synthetic entry to yuehchukene analogues; stereoselective synthesis of 7,7-bis-nor-yuehchukene via 9-methyl-6-0x0-6aβ-7,8,10aβ-tetrahydroindeno[2,1-b]indole, 3317-22

#### **ANTIGENIC DETERMINANT**

Synthesis of oligosaccharides corresponding to the antigenic determinants of the β-haemolytic Streptococci Group A. Part 1. Overall strategy and synthesis of a linear trisaccharide, 2103–12 ANTILEUKAEMIC ACTIVITY

A total synthesis of allamcin. An approach to antileukaemic iridoid lactones and formal syntheses of plumericin and allamandin, 1119-34

Penasterol, a novel antileukemic sterol from the Okinawan marine sponge Penares sp., 2403-6

ANTÎTUMOUR ALÂÂLOID

A new precursor to 3,4-didehydropyridine, and its use in the synthesis of the antitumour alkaloid ellipticine, 247-50 ANTÍTUMOUR ANTIBIOTIC

Synthesis of 6-hydroxy-1,4-dimethylisoquinoline and of ethyl 7-hydroxy-6-methoxy-1-methylisoquinoline-3-carboxylate, 1705-10 ANTIVIRAL

- Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 1. Substitutions on C-2' of the acyclic N-9 substituent, 2757-66
- Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 2. Substitutions of C-1' and C-3' of the acyclic N-9 substituent, 2767-76
- Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 3. Modification of a 3'hydroxymethyl group, 2777-84 ANTIVIRAL ACTIVITY
- Nucleosides. Part 6. New chemical modification of the ribosyl moiety in uridines; synthesis of 2,2'-anhydro-1-[5-deoxy-5 (substituted thio)-β-D-arabinofuranosyl juracil derivatives and their conversion into 3',5'-epithiopyrimidine nucleosides, 2233-42

#### APHIDICOLIN

- Studies in terpenoid biosynthesis. Part 35. Biosynthetic sequences leading to the diterpenoid aphidicolin in Cephalosporium aphidicola, 1477-80
- Studies in terpenoid biosynthesis. Part 38. The role of an 16B.17epoxyaphidicolane in the minor biosynthetic pathway leading to aphidicolin, 2009-12
- A mild method for the conversion of 1,3-glycols into unsaturated alcohols, 2013-8

### ARABINOSIDE

Syntheses and alkaline hydrolyses of 2,2'-imino- and 2,2-(substituted imino)-1-(2'-deoxy-β-D-arabinofuranosyl)uracils, 2955 - 62

**ARENESULPHINATE** 

Thermal decomposition of some allyl methoxyarenesulphinates, 1957-60

#### ARISTEROMYCIN

- Synthesis of carbocyclic nucleosides: preparation of (-)-5'homoaristeromycin and analogues, 2927-32
- AROMATICITY
- Preparation and X-ray crystal and molecular structure of 6bromopyrrolizin-3-one, 2145-8
- **AROMATIC SUBSTITUTION**

Use of the nuclear Overhauser effect in the determination of the orientation of aromatic substitution in tricyclic quinoxalinones, 1997-2000

ARUGOSIN

#### Studies on fungal products. Part 15. Isolation and structure determination of arugosin E from Aspergillus silvaticus and cycloisoemericellin from Emericella striata, 907-12

ARYĹAMINE

The synthesis of di- and tri-arylamines through halogen displacement by base-activated arylamines: comparison with the Ullmann condensation, 1331-6

- The reaction of ortho-substituted aromatic azides with boron trichloride or trifluoride, 2615–20 ARYLNITRENE
- - Intermolecular thermal reaction of arylnitrenes with furans, 1859-
- **ARYLNITRENIUM ION**

The reaction of ortho-substituted aromatic azides with boron trichloride or trifluoride, 2615-20

### ARYLTETRALIN

A short versatile synthesis of aryltetralin lignans including deoxyisopodophyllotoxin and epi-isopodophyllotoxin, 1615-24 ARYNE

A new precursor to 3,4-didehydropyridine, and its use in the synthesis of the antitumour alkaloid ellipticine, 247-50

#### ASCLEPIAS FRUTICOSA

- New glucoside conjugates and other cardenolide glycosides from the monarch butterfly reared on Asclepias fruticosa L., 1851 -8
- ASPARTIC ACID

Amino acids and peptides. Part 19. Synthesis of B-1- and B-2adamantyl aspartates and their evaluation for peptide synthesis, 2129-36

### ASPERGILLUS MALIGNUS

Biosynthesis of canescin, a metabolite of Aspergillus malignus: incorporation of methionine, acetate, succinate, and isocoumarin precursors, labelled with deuterium and carbon-13, 747-54 ASPERGILLUS SILVATICUS

Studies on fungal products. Part 15. Isolation and structure determination of arugosin E from Aspergillus silvaticus and cycloisoemericellin from Emericella striata, 907-12

#### ASTĚRIAS AMURENSIS

Starfish saponins. Part 34. Novel steroidal glycoside sulphates from the starfish Asterias amurensis, 1337-48

### ASYMMETRIC INDUCTION

- Efficient 1,4-asymmetric induction utilizing electrostatic interaction between ligand and substrate in the asymmetric hydrogenation of didehydrodipeptides, 1787-90
- Asymmetric synthesis of trans-benzoperhydroindan: asymmetric induction in intramolecular Diels-Alder reactions of oquinodimethanes, 2835-8

#### ASYMMETRIC SYNTHESIS

- Asymmetric syntheses. Part 2. Reduction of ketones with chiral sodium borohydride-lactic acid derivative systems, 417-22
- Chiral synthesis of 3-[(R)-1-hydroxyethyl]-4-oxoazetidin-2-vl acetate using an asymmetric 1,3-dipolar cycloaddition reaction, 1593-8

Transition-metal mediated asymmetric synthesis. Part 6. Organometallic approaches to the enantiomer synthesis of tridachione: a role for planar chirality in synthesis design, 2069-

- Asymmetric synthesis of L-[3-<sup>11</sup>C]alanine and L-[3-<sup>11</sup>C]phenylalanine by a phase-transfer alkylation reaction, 3081-1

#### ATROPISOMER

- Coenzyme models. Part 45. Synthesis of atropisomeric flavins and their novel redox-induced racemisation, 313-20
- AUTOXIDATION
  - Autoxidation of naphthols: a new entry to the perylene system, 583-6
- Autoxidation of a sterically hindered phenanthrene-4,5-diol and conversion of the products into phenanthrenequinones, 1845-50 **AVERMECTIN**
- Enanticospecific synthesis of the spiroacetal moieties of avermectins  $A_{1b}$ ,  $B_{1b}$ ,  $A_{1a}$ ,  $B_{1a}$ ,  $A_{2b}$ ,  $B_{2b}$ ,  $A_{2a}$ , and  $B_{2a}$  and milbemycins  $\alpha_7$  and  $\alpha_8$ , 85–98 AVERUFIN

Synthesis of averufin and its role in aflatoxin B1 biosynthesis, 839-62

#### AXIAL CHIRALITY

- Coenzyme models. Part 45. Synthesis of atropisomeric flavins and their novel redox-induced racemisation, 313-20
- AZA-ALLYL ANION
- X=Y-ZH Systems as potential 1,3-dipoles. Part 9. Aza-allyl anion precursors from the reaction of (1,3-dioxoindan-2ylidene)malononitrile with a-amino acids and their methyl esters, 541-4

#### AZABICYCLONONANE

- Synthesis of 5,9,9-trisubstituted 1-azabicyclo[3.3.1]nonanes and their conformational analyses, 1057-64
- AZABICYCLO-OCTENE
- 1,3-Dipolar character of six-membered aromatic rings. Part 56. The cycloadditions of acetylenes and 3-oxidopyridinium betaines, 917 20

### AZA COPE REARRANGEMENT

Chemistry of 6H-pyrido[4,3-b]carbazoles. Part 13. Syntheses of ring-A- and ring-D-substituted ellipticines, 2945-54

### AZACROWN ETHER

Macroheterocycles. Part 44. Facile synthesis of azacrown ethers and cryptands in a two-phase systems, 3141-8

### AZA-ČYCLOL

Endoannular interactions in cysteine-containing cyclotripeptides: one-step synthesis and crystal structure of a tetracyclic aza-cyclol, 2647-52

#### AZADIENE

Cycloaddition of unactivated 2-aza-1,3-dienes with heterocumulenes: a convenient route to the synthesis of 1,3difunctionalized compounds, 1739-44

#### AZAPENTACENE

- 1,3,9,11,12,14-Hexa-azapentacene-2,4,8,10(3H,9H,12H,14H)tetraones (doubled 5-deazaflavins) with potential for oxido reduction, 1809-12
- AZAPENTAPHENE

# 2,4,5,8,9,11-Hexa-azapentaphene-1,3,10,12(2H,5H,8H,11H)-tetraones (angular 5-deazapteridino-deazaflavins) with strong oxidizing power, 1813–8 AZASPIROUNDECENE

Palladium-catalysed spirocyclisation of 3-acetoxy-1-(4aminoalkyl)cyclohexenes, 2255-8

#### AZASTEROID

Photo-induced molecular transformations. Part 87. Regiospecific photo-Beckmann rearrangement of steroidal α,β-unsaturated ketone oximes: synthesis of some steroidal enamino lactams, 321-

#### AZATRICYCLODODECANE

Synthesis of novel carbo- and hetero-polycycles. Part 7. Synthesis of 6-azatricyclo[6.3.1.0<sup>4,10</sup>]dodecane and 5-azatricyclo[5.3.1.1<sup>3,9</sup>]dodecane derivatives *via* intramolecular cycloaddition of N-{(endo-bicyclo[3.3.1]non-6-en-3-yl)methyl}nitrones, 719–24 AZA-WITTIG REACTION

Iminophosphorane-mediated annelation of a pyridine or pyrimidine ring into an indole ring: synthesis of  $\beta$ -,  $\gamma$ -carbolines and pyrimido[4,5-b]indole derivatives, 1819–22

#### AZAXYLENĚ

rings. Part 8. Flash vacuum pyrolysis of 2-azidobenzylpyridines, 69-76 Intramolecular nitrene insertions into aromatic and heteroaromatic

AZEPINOBENZOPYRANONE Benzopyrans. Part 23. Nitrogen heterocycles fused with or linked to 1-benzopyran from 3-acyl-2-methyl-1-benzopyran-4-one, 1489-94

#### AZETE

Photochemical and thermal reactions of heterocycles. Part 5. Products via transient quasiantiaromatic azetine intermediates generated by desulphurisation of photochemical intermediates from a thiazolium-4-olate and 4-aminothiazolium salts, 189 - 92

#### AZETIDINE

Retention of stereochemistry in the ring-opening of penicillin V sulphone p-nitrobenzyl ester, 183-8

- Enantioselective synthesis of (3S)-trans-4-(substituted methyl)monobactams from 2,3-O-isopropylidene-Dglyceraldehyde, 649–56
- Chiral synthesis of 3-[(R)-1-hydroxyethyl]-4-oxoazetidin-2-ylacetate using an asymmetric 1,3-dipolar cycloaddition reaction, 1593-8
- Studies related to pencillins. Part 27. A strategy for the conversion of 1,1-dioxides of penicillanates into 1,1-dioxides of 3-methylceph--em-4-carboxylates, 3359-66

### AZETIDINEDIOŇE

Studies related to penicillins. Part 26. Conversion of potassium benzylpenicillinate into 1-substituted derivatives of 3phenylacetamidoazetidine-2,4-dione, 2813-20

#### AZETIDÍNONE

- Reaction of silylimines with ester enolates. Synthesis of Nunsubstituted azetidinones starting from nitriles, 945-8
- Photochemistry of 5-methylpyrimidin-4-ones in acetic acid solution: thermal rearrangements of Dewar pyrimidinones and 4-acetoxyazetidin-2-ones, 2653–62

#### AZIDE

Reaction of phenylnitrenium ion with sulphides. A novel synthetic method for aminophenyl sulphide derivatives, 521-8 Intermolecular thermal reaction of arylnitrenes with furans, 1859-

#### 64

- Synthesis of novel 2,3-dihydro-8H-thieno[2,3-d]azepines and 1,2,3,4-tetrahydro-1H-3-benzazepines via photolyses of 6-azido-2,3-dihydrobenzo[b]thiophene and 6-azido-1,2,3,4-
- 2.5-Ginydrodenzo[0]miophene and o uzedo 1,2,0,1
   tetrahydronaphthalene, 1933-8
   Benzylic azide functionalization of tautomeric o-acyl-benzoic acid, -benzamide, and -nicotinic acid derivatives, and thermal decomposition of the derived azides, 2149-54
   Genzoli Control acid derivatives and thermal
- Formal synthesis of the antitumor antibiotic CC-1065, 2491-500

- The reaction of ortho-substituted aromatic azides with boron trichloride or trifluoride, 2615-20
- AZIDOCINNAMATE
- Formal synthesis of the antitumor antibiotic CC-1065, 2491-500 AZINE
- The reactions of hydrazones and related compounds with strong bases. Part 4. 4,5-Diaryl-1,2,3-triazoles from aromatic aldehyde azines and from the reaction of arenecarbonitriles with aryldiazomethanes, 2917-20
- AZIRIDINE
  - Thermal fragmentation of 2-azidobenzo[b]thiophene in the presence of alkenes: a new synthetic route to 1-(2-benzo[b]thienyl)aziridines and/or thiochromans-4-carbonitriles, 3375-80
- AZIRINE
- Novel base-induced reactions of substituted (1,2-benzisoxazol-3yl)acetates, 1013-22

### AZLACTONE

Reactions of some 1,3-diaminonucleophiles with azlactones, 1659-62

AZOALKANE

2,3,7,8-Tetra-azatetracyclo[7.3.1.0<sup>4.12</sup>0<sup>6.10</sup>]tridecanes and 2,4,6,8tetra(alkylamino)bicyclo[3.3.1]nonanes, 2501-8

- AZOLE
- Cyclization of isothiosemicarbazones. Part 8. Formation and structure of gem-bis(3-alkylthio-1H-1,2,4-triazol-1-yl)alkanes and related compounds, 1897-904
- The reaction of ortho-substituted aromatic azides with boron trichloride or trifluoride, 2615-20
- AZOLENINE
- The synthesis and chemistry of azolenines. Part 8. The Paal-Knorr reaction with cyclic 2-(acylmethyl)-2-alkyl-1,3-diketones: isolation of 1-acyl-1H-pyrroles via rearrangement, 161-8
- **AZOMETHINE**
- X=Y-ZH systems as potential 1,3-dipoles. Part 10. The decarboxylative route to azomethine ylides. Background and relevance to pyridoxal decarboxylases, 949–56 AZOMETHINE YLIDE
- X=Y-ZH Systems as potential 1,3-dipoles. Part 11. Stereochemistry of 1,3-dipoles generated by the decarboxylative route to azomethine ylides, 2693-702
- X=Y-ZH Systems as potential 1,3-dipoles. Part 12. Mechanism of formation of azomethine ylides via the decarboxylative route from α-amino acids, 2703–14 AZONIA POLYCYCLE

- Synthesis of condensed polycyclic azonia aromatic compounds by photocyclization, 415-4
- BACILLUS CEREUS

Synthesis of analogues of 6β-bromopenicillanic acid and penicillanic acid S,S-dioxide. Part 1. Synthesis of 3x-derivatives of 6\beta-bromo-2,2-dimethylpenam and 2,2-dimethylpenam S,S-dioxide, 1551-6

#### **BAKERS' YEAST**

Bakers' yeast mediated preparation of (S)-3-(2-furyl)-2methylpropan-1-ol, a bifunctional chiral C<sub>5</sub> isoprenoid synthon: synthesis of (4R,8R)-4,8-dimethyldecanal, a pheromone of *Tribolium castaneum*, 3061–6

BAPTISIA AUSTRALIS

Incorporation of  $[1,2^{-13}C_2]$  cadaverine and the enantiomeric  $[1^{-2}H]$  cadaverines into the quinolizidine alkaloids in *Baptisia* australis, 3275-80

#### BASE

- Novel base-induced reactions of substituted (1,2-benzisoxazol-3yl)acetates, 1013--22
- **BASE CATALYSIS**
- The synthesis of di- and tri-arylamines through halogen displacement by base-activated arylamines: comparison with the Ullmann condensation, 1331-6

#### BASIDIOMYCETES

Secondary mould metabolites. Part 19. Structure elucidation and absolute configuration of melledonals B and C, novel antibacterial sesquiterpenoids from Armillaria mellea. X-Ray molecular structure of melledonal C, 503-10

**BECKMANN REARRANGEMENT** 

Photo-induced molecular transformations. Part 87. Regiospecific photo-Beckmann rearrangement of steroidal  $\alpha,\beta$ -unsaturated ketone oximes: synthesis of some steroidal enamino lactams, 321-6

Isoxazole-oxazole conversion by Beckmann rearrangement, 1875-

- The ansamycins: synthesis of the naphthoquinonoid nucleus of rifamycin W; crystal structure verification of a key naphthalenic intermediate, 2477-84
- BENZAMIDE
- Benzylic azide functionalization of tautomeric o-acyl-benzoic acid, -benzamide, and -nicotinic acid derivatives, and thermal decomposition of the derived azides, 2149-54
- BENZAZEPINE
  - Synthesis of novel 2,3-dihydro-8H-thieno[2,3-d]azepines and 1,2,3,4-tetrahydro-1H-3-benzazepines via photolyses of 6-azido-2,3-dihydrobenzo[b]thiophene and 6-azido-1,2,3,4-
- 2,3-dinydrobenzolojtniopnene and 6-azido-1,2,3,4-tetrahydronaphthalene, 1933-8
   Photochemistry of 2'-substituted 1,2,3,4-tetrahydronaphthalene-1-spiro-3'-oxaziridines. Variable-temperature <sup>1</sup>H nuclear magnetic resonance spectroscopy of 1-substituted 1,2,4,5-tetrahydro-2*H*-1-benzazepin-2-ones, 3399
   BENZENETHIOLATE

Reactivities of heteroaromatic cations containing a Group VIB element in nucleophilic reactions. Reactions of 9-phenylxanthylium, -thioxanthylium, and -selenoxanthylium salts with amines, sodium phenolate, and sodium benzenethiolate, 2271-6 BENZIMIDAZOLE

- o-Nitroaniline derivatives. Part 9. Benzimidazole N-oxides unsubstituted at N-1 and C-2, 681-90
- o-Nitroaniline derivatives. Part 10. 5- and 6-Amino-1Hbenzimidazole 3-oxides, 691-6
- 2H-Benzimidazoles (isobenzimidazoles). Part 3. Thermal isomerisation of substituted 2H-benzimidazoles to 1Hbenzimidazoles, 991-8
- Synthesis of benzimidazolyl selenophenes, 1033-8
- o-Nitroaniline derivatives. Part 11. 4- and 7-amino-1Hbenzimidazole 3-oxides, 1939-44
- Synthesis and thermal reactions of 1,2-dihydro-1,2,4-benzotriazines, 3381 - 6

#### BENZIMIDAZOLE-SPIROCYCLOHEXANE

2H-Benzimidazoles (isobenzimidazoles). Part 2. Synthesis and reactions of 5-azido-2H-benzimidazole-2-spirocyclohexane, 983-90

#### BENZIMIDAZOPHTHALAZINE

Synthesis and thermal reactions of 1,2-dihydro-1,2,4-benzotriazines, 3381-6

- BENZINDENE
- A novel route to the des-A corticosteroids, 885-8
- BENZINDOLE
- Synthesis of linear ethyl 9-methoxy-1H-benz[ / ]indole-2carboxylate, 3005–12
- BENZISOQUINOLINE

The synthesis of a conjugate of progesterone with Lucifer Yellow VS: a potential probe for fluoroimmunoassay of steroids, 2979-

BENZISOTHIAZOLE

Reaction of benzyne with 1,2,5-thiadiazoles and 2,1-

- benzisothiazoles, 2141-4
- BENZISOXAZOLE Novel base-induced reactions of substituted (1,2-benzisoxazol-3-

# yl)acetates, 1013–22 BENZOCYCLOBUTABIPHENYLENE

Cyclobutarenes. Part 3. Synthesis of bromodicyclobutarenes and some new derivatives of the benzocyclobutabiphenylenes, 961-70

### BENZOCYCLOBUTENE

A novel synthesis of cyclobutane monoterpenes  $(\pm)$ -grandisol and (±)-lineatin, 2433-8

**BENZÓCYCLO-OCTENONE** 

Photo-induced molecular transformations. Part 87. Ring expansion through [2 + 2] photocycloaddition- $\beta$ -scission sequences; synthesis of benzohomotropones from 1- and 2-naphthols and methyl acrylate, 491-6

#### BENZODIOXÁNE

Reaction of 1,2-benzoquinones with enamines, 151-6

BENZODIPYRROLE

Synthesis of 6-hydroxy-1,4-dimethylisoquinoline and of ethyl 7hydroxy-6-methoxy-1-methylisoquinoline-3-carboxylate, 1705-10

BENŽOFURAN

- Novel base-induced reactions of substituted (1,2-benzisoxazol-3yl)acetates, 1013-22
- Selective preparation and cyclization of 2-(2-hydroxyphenyl)-2-

#### **BENZOFURAN** (contd)

- (isopropylthio)ethanols. New synthesis of 1-benzofurans, 3029-36 BENZOFURAZAN
- Nucleophilic attack on 4,7-disubstituted benzofurazans and their Noxides: synthesis of tetrazolo[1,5-a]azepines, 145-50

### BENZOHOMOTROPONE

Photo-induced molecular transformations. Part 87. Ring expansion through [2 + 2] photocycloaddition- $\beta$ -scission sequences; synthesis of benzohomotropones from 1- and 2-naphthols and methyl acrylate, 491-6

### BENZOIĊ ACID

Benzylic azide functionalization of tautomeric o-acyl-benzoic acid, -benzamide, and -nicotinic acid derivatives, and thermal decomposition of the derived azides, 2149-54

#### BENZONÅPHTHYRIDINE

Intramolecular nitrene insertions into aromatic and heteroaromatic rings. Part 8. Flash vacuum pyrolysis of 2-azidobenzylpyridines, 69-76

#### BENZOPENTACYCLODODECANE

- Synthesis and photochemistry of 3,6-difluoro-10,11-benzopentacyclo[6,4,0.0<sup>2.7</sup>,0<sup>3.12</sup>.0<sup>6.9</sup>]dodeca-4,10-diene,
- 3307-10

#### BENZOPERHYDROINDAN

Asymmetric synthesis of *trans*-benzoperhydroindan: asymmetric induction in intramolecular Diels-Alder reactions of oquinodimethanes, 2835-8

#### BENZOPYRAN

Benzopyrans. Part 23. Nitrogen heterocycles fused with or linked to 1-benzopyran from 3-acyl-2-methyl-1-benzopyran-4-one, 1489-94

- BENZOPYRANOPYRIDAZINE Pyridazine chemistry. Part 33. 5-Aminopyridazin-4-yl o-
- fluorophenyl ketone as a key intermediate in the syntheses of diaza analogues of acridone, xanthone, and thioxanthone, 401–6 BENZOPYRANOPYRIDINE

Benzopyrans. Part 23. Nitrogen heterocycles fused with or linked to 1-benzopyran from 3-acyl-2-methyl-1-benzopyran-4-one, 1489-94

#### BENZOPYRENE

- Synthesis, spontaneous racemization, and photoisomerization of benzo[e]pyrene 9,10-oxide, 3013-8
- Preparation, properties, and some chemical reactions of

# phenaleno[1,9-*bc*]furan, 3169–74 BENZOQUINONE

- Reaction of 1,2-benzoquinones with enamines, 151-6
- Synthesis and characterization of crowned 1,4-benzoquinones as ionophore-dienophile (redox) combined systems: double interaction with catecholamines and tryptamine, 511-20 Synthesis of 2,3-dialkyl-6,7-dichloro- and 2,3-dialkyl-6,7-dibromo-
- 1,4-naphthoquinones, 559–62 BENZOTHIADIAZOLE

Sulphur nitride in organic chemistry. Part 17. Preparation of 1,8-diaminocarbazole, 1869-74 BENZOTHIADIPHOSPHOLE

- The reaction of alkyl-substituted thioanisoles with PCl<sub>3</sub> and AlCl<sub>3</sub>: a route to [1,2,3]benzothiadiphospholo[2,3-b]
- 1,2,3]benzothiadiphosphole derivatives, 3281-4

### BENZOTHIAZOLE

Regioreversed nucleophilic substitution of 2-(allyloxy)benzothiazole by allylic Grignard reagents. A regioselective synthesis of 1,5dienes, 1301-4

#### BENZOTHIOPHENE

- Thermal fragmentation of 2-azidobenzo[b] thiophene in the presence of alkenes: a new synthetic route to 1-(2-benzo[b] thienyl)aziridines and/or thiochromans-4-carbonitriles, 3375-80
- BENZOTHIOPYRAN
- Reactions of 3-bromo-2,3-dihydro- and 2,3-dibromo-4H-1benzothiopyran-4-one 1,1-dioxides with various amines, 1829-36 BENZOTHIOPYRANOPYRIDAZINE

- Pyridazine chemistry. Part 33. 5-Aminopyridazin-4-yl o-
- fluorophenyl ketone as a key intermediate in the syntheses of diaza analogues of acridone, xanthone, and thioxanthone, 401-6 BENZOTRIAZĬNE
- 1.2.3-Benzotriazine 2-oxides, 1509-12
- Synthesis and thermal reactions of 1,2-dihydro-1,2,4-benzotriazines, 3381-6

#### **BENZOTRIAZOLE**

The chemistry of benzotriazole. Part 8. A novel two-step procedure for the N-alkylation of amides, 2339-44

#### BENZOXADIAZINE

- Ring contraction of 1,2,4-benzoxadiazines to benzoxazoles, 2169-74 BENŽOXANTHENE
- Convenient syntheses of the naturally occurring benzo[b]xanthen-12-one bikaverin. X-Ray crystallographic confirmation of the product regiochemistry, 3209-16 BENZOXAZINE
- Allenes. Part 46. Synthesis of 1,2-dihydro-4H-3,1-benzoxazines, 4H-3,1-benzoxazines, and 3-cyanoquinolines from allenic and acetylenic nitriles, 277-82
- BENZOXAZOLE
- Ring contraction of 1,2,4-benzoxadiazines to benzoxazoles, 2169–74 BENZOYL CYANIDE
  - Reactions of trimethylsilyl ketene acetals with benzoyl cyanide and with  $\alpha$ -keto esters, 411–4
- BENZYLIDENATION
- Heterocycles from carbohydrate precursors. Part 41. Mode of formation of 1,3-dioxolanes and 1,3-dioxanes from 1-C substituted glycerols during their benzylidenation, 139-44 BENZYNE
- - Reaction of benzyne with 1,2,5-thiadiazoles and 2,1benzisothiazoles, 2141-4
- BETAINE
  - Synthesis, molecular structure, and reactions of 1H-1,2,4triazolo[4,3-a]pyrimidinium betaines, 351-8
  - 1,3-Dipolar character of six-membered aromatic rings. Part 56. The cycloadditions of acetylenes and 3-oxidopyridinium betaines,
- 917-20 BIBENZYL
- Synthesis of bibenzyl cannabinoids, hybrids of two biogenetic series found in *Cannabis sativa*, 1263-70 **BICHROMOPHORE**
- Inter- and intra-molecular photocycloaddition of enol ethers to naphthalene, 31-6
- BICOÚMARIN
  - The synthesis of desertorin C, a bicoumarin from the fungus Emericella desertorum, 2425-8
- BICYCLOHEPTENE
- Resolution of bicyclo[3.2.0]hept-2-en-6-ols and bicyclo[4.2.0]oct-2en-endo-7-ol using lipases, 3387-90
- BICYCLOMYCIN

Synthetic studies on bicyclomycin and its analogues. Part 1. Synthesis of substituted 2-oxa-8,10-diazabicyclo[4.2.2]decanes,

- BICYCLONONANE
  - 2,3,7,8-Tetra-azatetracyclo[7.3.1.0<sup>4.12</sup>0<sup>6.10</sup>]tridecanes and 2,4,6,8tetra(alkylamino)bicyclo[3.3.1]nonanes, 2501-8
- Resolution of bicyclo[3.2.0]hept-2-en-6-ols and bicyclo[4.2.0]oct-2-en-endo-7-ol using lipases, 3387-90 BIKAVERIN
- - Convenient syntheses of the naturally occurring benzo[b]xanthen-12-one bikaverin. X-Ray crystallographic confirmation of the product regiochemistry, 3209-16
- BILÍN
  - Synthetic studies relevant to biosynthetic research on vitamin B Part 6. Synthesis of chlorins by a photochemical approach, 1557-
  - Synthetic studies relevant to biosynthetic research on vitamin  $B_{12}$ . Part 7. Synthesis of  $(\pm)$ -bonellin dimethyl ester, 1569–76
  - Synthetic studies relevant to biosynthetic research on vitamin B<sub>12</sub>. Part 8. Synthesis of  $(\pm)$ -Faktor-I octamethyl ester, 1577–86

**BIOLUMINÉSCENCE** ÌMMUNOASSAY

- Synthesis of conjugates of 11α-hydroxyprogesterone with β-nicotinamide adenine dinucleotide (β-NAD) and adenosine triphosphate (ATP), 2983-92
- BIOMARKER
  - Synthesis of an Alberta oil sand bitumen C20 tricyclic carboxylic acid bearing a novel diterpenoid skeleton, 2323-8
- BIOSYNTHESIS
- An efficient route to triene synthons for putative intermediates in polyether antibiotic biosynthesis, 53-60
- Biosynthesis of canescin, a metabolite of Aspergillus malignus: incorporation of methionine, acetate, succinate, and isocoumarin precursors, labelled with deuterium and carbon-13, 747-54
- An investigation of the biosynthesis of citromycetin in *Penicillium frequentans* using <sup>13</sup>C- and <sup>14</sup>C-labelled precursors, 755–62
- Isolation and structure elucidation of polivione, a polyketide cometabolite of citromycetin in Penicillium frequentans, 763-8

#### **BIOSYNTHESIS**

- A study of biosynthesis of the polyketide polivione in *Penicillium* frequentans using <sup>13</sup>C-, <sup>2</sup>H-, and <sup>18</sup>O-labelled precursors, 769-72
- Biosynthesis of palitantin, a polyketide metabolite of Penicillium <sup>13</sup>C n.m.r. assignment and incorporation of <sup>13</sup>C-, brefeldianum: <sup>2</sup>H-, and <sup>18</sup>O<sub>2</sub>-labelled acetates, 773-8
- Synthesis of averufin and its role in aflatoxin B1 biosynthesis, 839-62
- The biosynthesis of glaucine in *Litsea glutinosa*, 1447-50 The conformation of some site-specific inhibitors of the ring contraction step in gibberellin plant hormone biosynthesis, 1455-60
- Studies in terpenoid biosynthesis. Part 35. Biosynthetic sequences leading to the diterpenoid aphidicolin in Cephalosporium aphidicola, 1477-80
- Biosynthesis of the macrotetrolide antibiotics; the incorporation of carbon-13 and oxygen-18 labelled acetate, propionate, and succinate, 1719-28
- Thermorubin biosynthesis: evidence for the involvement of both salicylic acid and an undecaketide, 1865-8
- The aberrant biosynthesis of 2'-nitro- and 2'-bromo-papaverines, 1929-32
- Studies in terpenoid biosynthesis. Part 38. The role of an 16B,17epoxyaphidicolane in the minor biosynthetic pathway leading to aphidicolin, 2009-12
- Mechanistic consideration of P-450 dependent enzymic reactions: studies on oestriol biosynthesis, 2043-52
- Studies of precursor-directed biosynthesis with Streptomyces sp. Part 1. Isolation of manumycin analogues by feeding of aminobenzoic acids as  $C_7N$  starter units, 2123-8 Biosynthesis of the macrotetrolide antibiotics; the incorporation of
- carbon-13 and oxygen-18 labelled acetate, propionate, and succinate, 3059-60
- Biosynthesis of the polyether antibiotic monensin-A. Results from the incorporations of labelled acetate and propionate as a probe of the carbon chain assembly processes, 3183-94Incorporation of  $[1,2-^{13}C_2]$  cadaverine and the enantiomeric [1-
- <sup>2</sup>H]cadaverines into the quinolizidine alkaloids in Baptisia australis, 3275-80

#### BIOTIN

- Chemistry of biotin: access to 2,3- and 5,6-didehydrobiotin derivatives, 913-6
- BIPHENYLDÍOL
- Sulphur nitride in organic chemistry. Part 17. Preparation of 1,8diaminocarbazole, 1869–74 BIRCH REDUCTION
- Synthesis of 2,3-disubstituted cyclopent-2-en-1-ones from 6methoxyindanone, 1397-400
- Synthesis of tetrahydrodicranenone B, 1401–6 BONELLIN

- Synthetic studies relevant to biosynthetic research on vitamin  $B_{12}$ . Part 7. Synthesis of  $(\pm)$ -bonellin dimethyl ester, 1569–76
- BORANE
  - The reaction of ortho-substituted aromatic azides with boron trichloride or trifluoride, 2615-20

### BOROHYDRIDE

- Asymmetric syntheses. Part 2. Reduction of ketones with chiral sodium borohydride-lactic acid derivative systems, 417-22
- BOROHYDRIDE-ENHANCED DECHLORINATION Borohydride-enhanced dechlorination of chlorobenzenes and toluenes, 703-6

#### BRASSINOLIDE

Stereocontrolled synthesis of the brassinolide side-chain: formal synthesis of brassinolide, 1503-8

### **BRIDGED ADENINE**

Syntheses and properties of some polymethylene bridged adenines, 593-6

### BROMINATION

- Stereoselective C-4 functionalisation of flavan-3-ols. The significance of conformational mobility of the flavan heterocycle in stereoselectivity at the benzylic carbon, 2179-84
- Nucleosides. Part 5. Isolation and characterization of the stable cyclic adducts, (5*R*,6*S*)- and (5*S*,6*S*)-bromo-0<sup>6</sup>,5'-cyclo-5,6dihydrouridines in the bromination of 2',3'-O-
- isopropylideneuridine with N-bromosuccinimide, 2227-32 **BUFADIENOLIDE** 
  - Synthesis of the 14a- and 16a-epimers of bufotalin acetate and 16deacetylcinobufagin, 2037-42

### BUFOTALIN

- Synthesis of the  $14\alpha$  and  $16\alpha$ -epimers of bufotalin acetate and 16-deacetylcinobufagin, 2037-42
- BURKEA AFRICANA
- Oligomeric flavanoids. Part 2. The first profisetinidins with dihydroflavonol constituent units, 2567–72 BUTENONE
- Formation of oxygen-bridged heterocycles in the Hantzsch synthesis with 4-(2-hydroxyphenyl)but-3-en-2-one, 2053-
- **BUTOXY RADICAL**

butoxy radicals with allyl acrylate and with diallyl ether, 485-90 Initiation mechanisms in radical polymerization: reaction of t-

BUTTERFLY

New glucoside conjugates and other cardenolide glycosides from the monarch butterfly reared on Asclepias fruticosa L., 1851-8

- BUTYROLACTONE
  - Intramolecular free radical cyclisations onto enol ethers. A general synthesis of  $\alpha$ -alkyl- $\beta$ -oxy- and  $\alpha$ -methylene- $\beta$ -oxy- $\gamma$ -butyrolactones, 1095–106
- CADAVERINE
  - Incorporation of  $[1,2^{-13}C_2]$  cadaverine and the enantiomeric [1-<sup>2</sup>H]cadaverines into the quinolizidine alkaloids in *Baptisia* australis, 3275-80
- CAESIUM

meso-Reactivity of porphyrins and related compounds. Part 10. Direct fluorination of octaethylporphyrin with caesium fluoroxysulphate, 1735-8 CALCIUM ANTAGONIST

A novel, base-induced fragmentation of Hantzsch-type 4-aryl-1,4dihydropyridines, 1837-44

CALIXÀRENE

Macrocyclic and macropolycyclic compounds based upon 1,3disubstituted propane units, 13-22

CANESCIN

Biosynthesis of canescin, a metabolite of Aspergillus malignus: incorporation of methionine, acetate, succinate, and isocoumarin precursors, labelled with deuterium and carbon-13, 747-54 CANNABINOID

- Acid-catalysed terpenylations of olivetol in the synthesis of cannabinoids, 1243-50
- Terpenylations using (R)-(-)- $\alpha$ -phellandrene. Synthesis of the (3S,4R)-8,9-dihydro-o- and -p-cannabidiols, their iso-THC's, and the natural dihydrochalcone (3S,4R)-(+)-linderatin, 1251–
- Synthesis of cannabinoids carrying  $\omega$ -carboxy substituents: the cannabidiols, cannabinol and  $\Delta^1$  and  $\Delta^6$ -tetrahydrocannabinols of this series, 1255-62

Synthesis of bibenzyl cannabinoids, hybrids of two biogenetic series found in Cannabis sativa, 1263-70

- CANNABUS SATIVA
- Synthesis of bibenzyl cannabinoids, hybrids of two biogenetic series found in Cannabis sativa, 1263-70
- CAPNELLA IMBRICATA Total synthesis of  $(\pm)$ - $\Delta^{9(12)}$ -capnellene- $8\beta$ ,10 $\alpha$ -diol, 1077–84 CAPNELLENEDIOL
- Total synthesis of  $(\pm)$ - $\Delta^{9(12)}$ -capnellene-8 $\beta$ ,10 $\alpha$ -diol, 1077-84 CAPTOĎATIVE
- Regioselective formation of amidocarboxy-substituted free radicals,
- CARBAMOYLATION

Organic synthesis with carbon monoxide: the synthesis of carbamoylstannanes and aromatic carbamoylation, 569-74 CARBANIOŇ

- Reactions involving fluoride ion. Part 34. Stable perfluorinated carbanions, 201-8
- Reactions of metallated 1,3-dithianes with carboxylic acid derivatives, 269–76 CARBAPENEM
- Simple and condensed β-lactams. Part 9. Elaboration of the 3-(1hydroxyethyl) side chains of potential intermediates of carbapenem antibiotics via the 2-methyl-1,3-dioxolan-2-yl group,
- Synthesis of γ-lactam analogues of carbapenems with substituted-thio groups at the C-3 position, 2345-52 CARBAZOLE

A new route to 1-oxygenated carbazoles. Synthesis of the carbazole alkaloids murrayafoline-A and murrayaquinone-A, 235-40

#### CARBAZOLE (contd)

Synthesis of the carbazole alkaloid murrayaquinone-B, 241-6 Diels-Alder reactivity of pyrano[3,4-b]indol-3-ones. Part 2. Steric and electronic effects in the addition to alkynes, 1407–16 Diels-Alder reactivity of pyrano[3,4-b]indol-3-ones. Part 3. Intramolecular Diels-Alder reactions, 3249-54

#### CARBENE

Synthesis of novel carbo- and hetero-polycycles. Part 8. An efficient and convenient synthesis of adamantylidenevinylidenecyclopropane derivatives, 1047-50

### CARBENOID

Rhodium carbenoid mediated cyclisations. Part 2. Synthesis of cyclic ethers, 1417–24 CARBENOID DISPLACEMENT

A novel synthesis of pyrrolizidine alkaloids by means of an intramolecular carbenoid displacement (ICD) reaction,

### CARBOHYDRATE

Heterocycles from carbohydrate precursors. Part 40. Kinetic and thermodynamic products of ketalation of 1-C-substituted L-threo-glycerol: a regioselective formation of 1,3-dioxolanes, 133-8

Heterocycles from carbohydrate precursors. Part 41. Mode of formation of 1.3-dioxolanes and 1.3-dioxanes from 1-Csubstituted glycerols during their benzylidenation, 139-44

The allyl group for protection in carbohydrate chemistry. Part 21.  $(\pm)$ -1,2:5,6- and  $(\pm)$ -1,2:3,4-di-*O*-isopropylidene-*myo*-inositol. The unusual behaviour of crystals of  $(\pm)$ -3,4-di-*O*-acetyl-1,2:5,6-tetra-*O*-benzyl-*myo*-inositol on heating and cooling, a 'thermosalient solid', 981–0

Structural elucidation of alfalfa root saponins by mass spectrometry and nuclear magnetic resonance analysis, 3071–80

Higher-carbon sugars. Part 12. The synthesis of new octitols from D-glucose and D-mannose via the osmylation of unsaturated precursors, 3391-8

#### CARBOLINE

Application of a modified Pictet-Spengler reaction to the synthesis of optically active tetrahydro-β-carbolines, key intermediates in the preparation of many indole alkaloids, 739-46

Iminophosphorane-mediated annelation of a pyridine or pyrimidine pyrimido[4,5-*b*]indole class synthesis of  $\beta$ ,  $\gamma$ -carbolines and pyrimido[4,5-*b*]indole derivatives, 1819–22

#### CARBONATES

The synthesis of di- and tri-arylamines through halogen displacement by base-activated arylamines: comparison with the

Ullmann condensation, 1331-6

### CARBON MONOXIDE

Organic synthesis with carbon monoxide: the synthesis of carbamoylstannanes and aromatic carbamoylation, 569-74

### CARBONYL

Ready oxidation of alcohols to carbonyl compounds by sodium bromite in methylene dichloride in the presence of aluminium oxide, 2423-4 CARBONYLATION

Reaction of  $\alpha$ -substituted  $\beta$ -bromostyrenes with

dicarbonyldicyanonickelate(0) anion in alkaline medium under carbon monoxide, 1993–6 CARBONYL REGENERATION

Amberlyst 15, a superior, mild, and selective catalyst for carbonyl regeneration from nitrogeneous derivatives, 2563-6

### CARDENOLIDE

New glucoside conjugates and other cardenolide glycosides from the monarch butterfly reared on Asclepias fruticosa L., 1851-8

#### CAROTENOID

Carotenoids and related compounds. Part 40. Synthesis of trikentriorhodin and other β-diketones, 1371-82

Carotenoids and related compounds. Part 41. Structure of mytiloxanthin and synthesis of a *cis*-isomer, 1383-8Carotenoids and related compounds. Part 42. Structure of

isomytiloxanthin, 1389–96 CARVOTANACETONE

The chemistry of terpenes. Part 27. The halogenation of (+)thujone and of (-)-carvotanacetone, and the stereochemistry and mechanism of formation of 'tribromothujone', 1527-36

#### CATALYSIS

Rhodium-catalysed [2 + 2 + 2]-cycloadditions of acetylenes, 1357-

Rhodium(1)-catalysed reactions of enynes. Linear coupling vs.

cycloaddition, 1365-70

Amberlyst 15, a superior, mild, and selective catalyst for carbonyl regeneration from nitrogeneous derivatives, 2563-6

### CATECHIN-TAXIFOLIN

[2',2']-(+)-Catechin-(+)-taxifolin from commercial willow bark: structure, bonding positions and oxidative cleavage, 219-

#### CATECHOLAMINE

Synthesis and characterization of crowned 1,4-benzoquinones as inophore-dienophile (redox) combined systems: double interaction with catecholamines and tryptamine, 511–20

CATHARANTHUS ROSEUS

Leurosinone: a new binary indole alkaloid from Catharanthus roseus, 2175-8

#### CATION

New alkoxylated dibenzo[1,4]dichalcogenines as donors for lowdimensional materials: electrochemistry and cation-radical salts, 2095-102

#### CELLULOSE

A novel hydroxylactone from the Lewis acid catalysed pyrolysis of cellulose, 49-

#### **CEPHALOSPORIN**

- Novel alkoxylations of cephalosporins by cerium(IV) salts and by electro-oxidative procedures, 1685-8
- Direct incorporation of a  $6\alpha(7\alpha)$ -formamido group into penicillin and cephalosporin sulphides and sulphoxides, 2865-74

#### CEPHALOSPORIUM APHIDICOLA

- Studies in terpenoid biosynthesis. Part 35. Biosynthetic sequences leading to the diterpenoid aphidicolin in Cephalosporium aphidicola, 1477-80
- Studies in terpenoid biosynthesis. Part 38. The role of an  $16\beta_1$ 7-epoxyaphidicolane in the minor biosynthetic pathway leading to aphidicolin, 2009–12

#### CEPHEM

Studies related to pencillins. Part 27. A strategy for the conversion of 1,1-dioxides of penicillanates into 1,1-dioxides of 3-methylceph-3-em-4-carboxylates, 3359-66

#### CERIUM

Novel alkoxylations of cephalosporins by cerium(1v) salts and by electro-oxidative procedures, 1685–8 CHALCOGENOXANTHYLIUM SALT

- Reactivities of heteroaromatic cations containing a Group VIB element in nucleophilic reactions. Reactions of 9-phenyl-xanthylium, -thioxanthylium, and -selenoxanthylium salts with amines, sodium phenolate, and sodium benzenethiolate, 2271–6 CHAPMAN REARRANGEMENT

Cyclic guanidines. Part 2. Rearrangement of N-substituted 2-arylamino-4,5,6,7-tetrahydro-1H-1,3-diazepines. X-Ray molecular structure of 1-(2,6-dichlorophenyl)-2-(2methylallylimino)hexahydro-1,3-diazepine, 3311-6

- CHIRAL
  - Syntheses and reactions of optically active alkyltoluene-psulphinamides. Part 2. Substitution at sulphur with retention of configuration, 1695-8
  - +)-(3-Oxocamphorsulphonyl)oxaziridine as a highly stereoselective reagent for the oxidation of sulphides to chiral sulphoxides, 1753-8
  - Aldol reaction of reducing sugars. Convenient stereoselective synthesis of ribofuranosylacetone and chiral dienones, 2861-

#### CHIRAL BOROHYDRIDE

Asymmetric syntheses. Part 2. Reduction of ketones with chiral sodium borohydride-lactic acid derivative systems, 417-22 CHIRAL DIENE

Asymmetric Diels-Alder reactions. Part 1. Diastereofacial reactivity of (E)-3-trimethylsilyloxybuta-1,3-dienyl 2,3,4,6-tetra-O-acetyl-β-D-glucopyranoside towards cyclic dienophiles, 1773-86

- CHIRAL H.P.LC. Identification of the absolute stereochemistry of D- and L-
- oleandroses using a chiral h.p.l.c. column, 787–90 CHIRAL H.P.L.C. COLUMN

#### Identification of the absolute stereochemistry of D- and L-digitoxose using a chiral high-pressure liquid chromatography column, 2621-4

Studies on the constituents of Asclepiadaceae plants. Part 67. Further studies on glycosides with a novel sugar chain containing a pair of optically isomeric sugars, D- and L-cymarose, from Cynanchum africanum, 2625-32

### CHIRAL INTERMEDIATE

A synthesis of (2S,6S)-2-hydroxymethyl-6-methoxytetrahydropyran; a useful chiral intermediate, 999-1002

### CHIRALITY

Transition-metal mediated asymmetric synthesis. Part 6. Organometallic approaches to the enantiomer synthesis of tridachione: a role for planar chirality in synthesis design, 2069-

#### CHIRAL NITRONE

Chiral synthesis of 3-[(R)-1-hydroxyethyl]-4-oxoazetidin-2-yl acetate using an asymmetric 1,3-dipolar cycloaddition reaction,

#### 1593-8 CHLORIN

- Synthetic studies relevant to biosynthetic research on vitamin B Part 6. Synthesis of chlorins by a photochemical approach, 1557-68
- Synthetic studies relevant to biosynthetic research on vitamin B<sub>12</sub>. Part 8. Synthesis of  $(\pm)$ -Faktor-I octamethyl ester, 1577–86
- Syntheses of chlorins from unsymmetrically substituted iron porphyrins, 3119–32 CHLORINATION

Regioselective chlorination of valine derivatives, 259-64 **CHLOROBENZENE** 

Borohydride-enhanced dechlorination of chlorobenzenes and toluenes, 703-6

#### **CHLOROHÝDRIN**

Enantiospecific synthesis of the spiroacetal moieties of avermectins A<sub>1b</sub>, B<sub>1b</sub>, A<sub>1a</sub>, B<sub>1a</sub>, A<sub>2b</sub>, B<sub>2b</sub>, A<sub>2a</sub>, and B<sub>2a</sub> and milbemycins  $x_7$ and  $x_8$ , 85–98 CHLOROPHYLL

N.m.r. spectra of porphyrins. Part 35. An examination of the proposed models of the chlorophyll a dimer, 2443-52 CHLOROTOLUENE

Borohydride-enhanced dechlorination of chlorobenzenes and toluenes, 703-6

### CHOLESTANE

Synthesis of new nitro and amino sterols; potential inhibitors of 4methyl sterol oxidase, 3239-42

CHOLESTENE

Acid-catalysed rearrangements of steroid alkenes. Part 1. Rearrangement of 5<sub>a</sub>-cholest-7-ene, 1065-70

Acid-catalysed rearrangements of steroid alkenes. Part 2. A reinvestigation of the backbone rearrangement of cholest-5-ene, 1071 - 6

#### **CHOLESTENONE**

- Synthesis of putative precursors of ecdysone. Part 3. Synthesis of 3β,14x,25-trihydroxy-5β-cholest-7-en-6-one, 2353-64
- CHOLESTEROL
- Synthesis of 15β-hydroxy-24-oxocholesterol and 15β,29-dihydroxy-7-oxofucosterol, 2161-8 CHOLESTERYL ACETATE

Epoxidation with pyridine-trifluoroacetic anhydride-molecular oxygen and its mechanistic aspects, 2335-8 CHROMATOGRAPHY

Stereochemistry of cysteinesulphinic acid decarboxylase, 1547-50

### CHROMIUM

- Tetrahydroisoquinolines. Part 4. Enantioselective conversion of (+)-amphetamine into (+)-(1R,3S,4S)- and (-)-(1S,3S,4R)-1,2,3,4-tetramethyl-1,2,3,4-tetrahydroisoquinoline via tricarbonyl(arene)chromium methodology, 1481-8
- Preparation of steroidal  $5\beta,6\beta$ -epoxides and their oxidation by chromium trioxide, 2001–4

#### CHRYSENE

Synthesis of chrysenes and other a-fused phenanthrenes by a palladium(0) coupling-electrocyclic ring closure sequence, 2595-602

#### CINNAMATE

Cyclopalladiated aromatic imines in organic synthesis: the preparation of cinnamonitriles, cinnamates, unsymmetrical stilbenes, isoquinolones, and isoquinolines, 1317-24

#### **CINOBUFAGIN**

Synthesis of the  $14_{\alpha}$ - and  $16_{\alpha}$ -epimers of bufotalin acetate and  $16_{\alpha}$ -deacetylcinobufagin, 2037–42 CIRCULAR DICHROISM

- Chiroptical properties and molecular geometry of substituted succinic anhydrides and imides, 629-38
- Circular dichroism spectra and molecular geometry of six-

membered ring anhydrides and imides, 639-48 CITROMYCETIN

An investigation of the biosynthesis of citromycetin in *Penicillium* frequentans using <sup>13</sup>C- and <sup>14</sup>C-labelled precursors, 755–62 Isolation and structure elucidation of polivione, a polyketide

co-metabolite of citromycetin in Penicillium frequentans, 763-

#### **CITRONELLOL**

Asymmetric conjugate addition to unsaturated chiral amido alcohols using Grignard reagents co-ordinated with tertiary amines or DBU. Preparation of optically active 3-substituted carboxylic acids and (S)-(-)-citronellol, 415-6 CLAISEN CONDENSATION

Synthesis of 2-substituted 4-pyridylpropionates. Part 1. Claisen condensation approach, 2785-90

- CLAISEN REARRÂNGEMENT
  - Thermal Claisen rearrangement studies on 4,6- and 2,4diacetylresorcinol bisallyl ethers: observation of loss or [1,5] signatropic shift of acetyl groups, 623-8 Chemistry of 6*H*-pyrido[4,3-*b*]carbazoles. Part 13. Syntheses of
- ring-A- and ring-D-substituted ellipticines, 2945–54 CLAY CATALYSIS

Cyclodehydration of non-aromatic diols on Al<sup>III</sup>-montmorillonite clay: reactivity and mechanism, 1749-52

#### CLEAVAGE

Synthesis and photolysis of 4-thioxoazetidin-2-ones, 1353-6 CLOSTRIDIUM SUBTERMINALE

Mechanistic studies on lysine 2,3-aminomutase: carbon-13deuterium crossover experiments, 2119-22

### COENZYME B<sub>12</sub>

Butyrate metabolism in streptomycetes. Characterization of an intramolecular vicinal interchange rearrangement linking isobutyrate and butyrate in Streptomyces cinnamonensis, 3195-208

### COLOPHOSPERMUM MOPANE

Oligomeric flavanoids. Part 1. Novel dimeric profisetinidins from Colophospermum mopane, 1325–30 CONDENSATION

- Carotenoids and related compounds. Part 40. Synthesis of trikentriorhodin and other  $\beta$ -diketones, 1371-82
- Carotenoids and related compounds. Part 41. Structure of mytiloxanthin and synthesis of a cis-isomer, 1383-8
- Synthesis of enantio- and diastereoiso-merically pure substituted prolines via condensation of glycine with olefins activated by a carbonyl group, 2075-84
- The mechanism of two reactions leading to isomeric 2-(N,Ndisubstituted amino)thiazol-5-yl ketones, 2213-8
- **CONFIGURATIONAL STABILITY**

Stereoselective addition of lithium amides to activated triple bonds, 927-30

### CONFORMATION

- N.m.r. and conformational studies of some 1,4-linked disaccharides, 889-98
- Compounds with bridgehead nitrogen. Part 54. The stereochemistry of some derivatives of perhydrothiazolo[3,4-a]pyridine and the synthesis of 9-methylperhydro-3,8-methano-1,3-thiazocines, 1173-

Synthesis and nuclear magnetic resonance studies of some Nacylated methyl 4-amino-4,6-dideoxy-a-D-mannopyrano-sides, 1183-6

Spectrometric and chemical studies of 5-acyl- and 5-nitroso-2-(N,Ndisubstituted amino)thiazoles, 2209-12

Syntheses and alkaline hydrolyses of 2,2'-imino- and 2,2-(substituted imino)-1-(2'-deoxy-β-D-arabinofuranosyl)uracils, 2955-62

#### **CONFORMATIONAL ANALYSIS**

- N.m.r. and conformational studies on some 1,3-linked disaccharides, 209-18
- Solid state and solution conformation of phenylacetyl-L-cysteinyl- Solid state and solution conformation of phenylacetyl-L-cysteinyl-D-penicillamine cyclic disulphide methyl ester; a cyclic dipeptide containing a *trans* amide, 365-72
   Synthesis of 5,9,9-trisubstituted 1-azabicyclo[3.3.1]nonanes and their conformational analyses, 1057-64
   N.m.r. and conformational studies of the methyl glycosides of some 1,2- and 1,3-linked disaccharides, 2729-36
   CONFORMATIONAL MOBILITY
   Starealecting C 4 functionalization of flowan 3 als. The significance

Stereoselective C-4 functionalisation of flavan-3-ols. The significance of conformational mobility of the flavan heterocycle in stereoselectivity at the benzylic carbon, 2179-84

#### COPAENE

- Studies on a new route to  $(\pm)$ -copaene and  $(\pm)$ -ylangene, 3223-8 COPPER
- $2\alpha$ -Alkyl gibberellins A<sub>1</sub> and A<sub>4</sub>, 1983–92
- CORTISOL
- Total synthesis of cortisol: application to selective deuteriation at C-1 and C-19, 587-92 CORTISONE
- Total synthesis of cortisol: application to selective deuteriation at C-1 and C-19, 587–92
- COSTIC ACID
- A new eudesmenolide and 2-hydroxycostic acid from Sphaeranthus indicus Linn. X-Ray molecular structure of 4a,5a-epoxy-7ahydroxyeudesmanolide, 157-60
- COSÝNTHETASE
- Biosynthesis of porphyrins and related macrocycles. Part 30. Synthesis of the macrocycle of the spiro system proposed as an intermediate generated by cosynthetase, 1187-202

#### **COUPLING REACTION**

- Synthesis of chrysenes and other a-fused phenanthrenes by a palladium(0) coupling—electrocyclic ring closure sequence, 2595-602
- **CROWN ETHER**
- Synthesis and characterization of crowned 1,4-benzoquinones as ionophore-dienophile (redox) combined systems: double
- interaction with catecholamines and tryptamine, 511–20 Photoresponsive crown ethers. Part 20. Reversible photocontrol of association-dissociation equilibria between azobis(benzo-18crown-6) and diammonium cations, 1431-8 CRYPTAND

- Macroheterocycles. Part 42. A facile synthesis of dihydroxy cryptands and their dehydroxylation, 2533-6
- Macroheterocycles. Part 44. Facile synthesis of azacrown ethers and cryptands in a two-phase systems, 3141-8 CRYSTAL STRUCTURE

- Neighbouring group participation on the bromination of methyl gibberellate: X-ray molecular structure of methyl 3,13-di-Oacetylgibberellate 16B,17-dibromide and ent-3x, 13-diacetoxy-17bromo-10β,16β-dihydroxy-20-norgibberell-1-ene-7,19-dioic acid 19,10-lactone 7-methyl ester, 105-10
- A new eudesmenolide and 2-hydroxycostic acid from Sphaeranthus indicus Linn. X-Ray molecular structure of 4x,5x-epoxy-7xhydroxyeudesmanolide, 157-60
- β-Diketone interactions. Part 6. X-Ray molecular structure of 3-(4methoxyphenyl)pentane-2,4-dione, a β-diketone enol tautomer with a very strong hydrogen bond, 297–300 Synthesis, molecular structure, and reactions of 1H-1,2,4-
- triazolo[4,3-a]pyrimidinium betaines, 351-8
- Excitatory amino acids. Improved synthesis of ibotenic acid and Xray analysis of an unexpected reaction product, (RS)-N-[2-(3benzyloxyisoxazol-5-yl)-1-phenylethyl]-3-oxobutyramide, 359 - 64
- Solid state and solution conformation of phenylacetyl-L-cysteinylp-penicillamine cyclic disulphide methyl ester; a cyclic dipeptide containing a trans amide, 365-72
- Enantioselective synthesis of the tricyclo[5.2.2.0<sup>1,5</sup>]undecane skeleton using aprotic Michael-additions; formal total synthesis of (+)-isoeremolactone, 373-8
- Stereoselective cyclizations of unsaturated esters derived from 2,3-O-isopropylidene-D-ribose, 433-8
- Karounidiol [D: C-friedo-oleana-7,9(11)-diene-3x,29-diol] and its 3o-benzoate: novel pentacyclic triterpenes from Trichosanthes kirilowii. X-Ray molecular structure of karounidiol diacetate, 439 44
- 10β-Chloro-17β-hydroxyestra-1,4-dien-3-one and its related compounds, 457-60
- Synthetic studies towards the pinguisanes; synthesis of 4-epipinguisone, 471-80
- Secondary mould metabolites. Part 19. Structure elucidation and absolute configuration of melledonals B and C, novel antibacterial sesquiterpenoids from Armillaria mellea. X-Ray molecular structure of melledonal C, 503-10
- New germacrane derivatives from Nanothamnus sericeous. X-Ray molecular structure of (1R,4R,5R,6R,10R)-1,10;4,5-diepoxy-11hydroxygermacran-6-yl (Z)-2-methylbut-2-enoate, 657-62
- Synthetic approaches to the thiathromboxanes. Part 1. Preparation of functionalised dihydrothiopyrans, 663-74
- Petuniasterones, novel ergostane-type steroids of Petunia hybridia Vilm. (Solanaceae) having insect-inhibitory activity. X-Ray

molecular structure of the 22,24,25-

[(methoxycarbonyl)orthoacetate] of 7x,22,24,25tetrahydroxyergosta-1,4-dien-3-one and of 1a-acetoxy-24,25epoxy-7a-hydroxy-22-(methylthiocarbonyl)acetoxyergost-4-en-3-one, 711-8

- The synthesis and properties of some novel 5-amino-1,4,2 dithiazolium salts and the X-ray molecular structure of 5-morpholino-3-(4-nitrophenyl)-1,4,2-dithiazolium fluoroborate, 899–906
- Studies on fungal products. Part 15. Isolation and structure determination of arugosin E from Aspergillus silvaticus and cycloisoemericellin from Emericella striata, 907-12
- Biosynthesis of diisocyanoadociane, a novel diterpene from the marine sponge Amphimedon sp. crystal structure of a monoamide derivative, 1003-12
- Synthesis of some thiophenium bis(t-butoxycarbonyl)methylides, 1023 - 8
- Synthetic radical chemistry. Total synthesis of  $(\pm)$ -isoamijiol, 1085-
- Intramolecular free radical cyclisations onto enol ethers. A general synthesis of  $\alpha$ -alkyl- $\beta$ -oxy- and  $\alpha$ -methylene- $\beta$ -oxy- $\gamma$ butyrolactones, 1095-106
- Biosynthesis of porphyrins and related macrocycles. Part 30. Synthesis of the macrocycle of the spiro system proposed as an intermediate generated by cosynthetase, 1187-202

The stereochemistry of a rearrangement and fragmentation reaction of ring D of 13-hydroxygibberellins, 1451-4 The conformation of some site-specific inhibitors of the ring

- contraction step in gibberellin plant hormone biosynthesis, 1455-60
- Stereochemistry of hydroboronation and osmylation of 3x,5cycloandrost-6-en-17-one, 1465-8 Steroidal allylic and homoallylic rearrangements during
- halogenation with triphenylphosphine and carbon tetrachloride, 1469-72
- Stereochemistry of epoxidation of some A-norandrost-5-enes, 1473-
- Tetrahydroisoquinolines. Part 4. Enantioselective conversion of (+)-amphetamine into (+)-(1R,3S,4S)- and (-)-(1S,3S,4R)-1,2,3,4-tetramethyl-1,2,3,4-tetrahydroisoquinoline via
- tricarbonyl(arene)chromium methodology, 1481 8 Chemistry of silyl thioketones. Part 4. 2,4,6-Triaryl-2,4,6-tris(trimethylsilyl)-1,3,5-trithianes from silyl thioketones: crystal structure of 2,4,6-triphenyl-2,4,6-tris(trimethylsilyl)-1,3,5-trithiane and stereochemistry of desilylation with fluoride ion, 1499–502
- Partial synthesis of 4-epi-trachylobagibberellin A<sub>12</sub>, 1513–6 Lead(iv) ester and electrochemical oxidations of phenolic
- compounds: a comparative study, 1677-84 Studies on fungal products. Part 17. Isolation and structures of novel indoloditerpenes, emindoles DA and DB, from Emericella desertorum: X-ray molecular structure of emindole DA acetate, 1689 - 94
- Asymmetric Diels-Alder reactions. Part 1. Diastereofacial reactivity of (E)-3-trimethylsilyloxybuta-1,3-dienyl 2,3,4,6-tetra-O-acetyl-β-D-glucopyranoside towards cyclic dienophiles, 1773-86
- Autoxidation of a sterically hindered phenanthrene-4,5-diol and conversion of the products into phenanthrenequinones, 1845-50
- Stable 2-thianaphthalenes: synthesis and reactions with electrophiles, 1885-96
- Intramolecular ene reaction of the unsaturated acyloin 3-(but-3enyl)-2-hydroxy-3-methylcyclohexanone, 2033-6
- Preparation and X-ray crystal and molecular structure of 6-bromopyrrolizin-3-one, 2145-8
- Spectrometric and chemical studies of 5-acyl- and 5-nitroso-2-(*N*,*N*-disubstituted amino)thiazoles, 2209–12 Studies related to penicillins. Part 25. Synthesis of *N*-phenylacetyl
- and N-triphenylmethyl derivatives of 6-aminopenam 1-oxides, 2259-70
- Reactivity and chemoselectivity of primary Z- $\beta$ -enamino- $\lambda^5$ -phosphazenes towards electrophiles, 2329–34
- Synthesis and acetylation of naphthols as precursors to naturally derived naphthoquinones; crystal structure of the aphin-related 7-O-methyl Quinone A, 2459-68
- The ansamycins: synthesis of the naphthoquinonoid nucleus of rifamycin W; crystal structure verification of a key naphthalenic intermediate, 2477-84
- Stereo-structures of reaction products of thymidine epoxides with amines and L-amino acid ethyl esters, 2555-62

**CRYSTAL STRUCTURE** (contd)

- Endoannular interactions in cysteine-containing cyclotripeptides: one-step synthesis and crystal structure of a tetracyclic aza-cyclol, 2647-52
- Preparation and properties of novel sulphur heterocycles from the reaction of 4,5-disubstituted 2-lithio-1,3-dithioles with carbon disulphide and X-ray crystallographic structure of 2-(4,5dimethyl-1,3-dithiolylidene)-5,6-dimethyl-2,3-dihydro-1,4-dithiine-3-thione, 2751-6
- Reactivity of phenyliodonium bis(arylsulphonyl)methylides towards alkenes and alkynes: crystal structure of 9-phenylsulphonyl-1,2,3,4,4a,9a-hexahydro-1,4-methanofluorene, 2839-46 Cyclophilic reactions of allene-1,3-dicarboxylic ester. Part 7.
- Synthesis of bicyclic and tricyclic heterocyclic compounds involving nitrogen, sulphur, and carbon as nucleophiles, 2993-3004
- α-Oxyiminophosphonates: chemical and physical properties. Reactions, theoretical calculations, and X-ray crystal structures of (E)- and (Z)-dimethyl  $\alpha$ -hydroxyiminobenzylphosphonates, 3047-
- Convenient syntheses of the naturally occurring benzo[b]xanthen-12-one bikaverin. X-Ray crystallographic confirmation of the product regiochemistry, 3209-16
- Photochemistry of N-heterocycles. Part 1. Synthesis and photochemistry of some 2(4),5-dihydro-1,2,4-triazines. X-Ray molecular structure of 1-(4-methyl-3,5,6-triphenyl-1,4,5,6-
- Cyclic guanidines. Part 2. Rearrangement of N-substituted 2-arylamino-4,5,6,7-tetrahydro-1H-1,3-diazepines. X-Ray molecular structure of 1-(2,6-dichlorophenyl)-2-(2-methylallylimino)hexahydro-1,3-diazepine, 3311-6 Higher-carbon sugars. Part 12. The synthesis of new octitols from
- D-glucose and D-mannose via the osmylation of unsaturated precursors, 3391-8

#### CUCURBITACEAE

- Karounidiol [D:C-friedo-Oleana-7,9(11)-diene-3a,29-diol] and its 3o-benzoate: novel pentacyclic triterpenes from Trichosanthes kirilowii. X-Ray molecular structure of karounidiol diacetate, 439-44
- **CUMULENE**
- Chloromethyl-lithium and 1-chloro-2-methylprop-1-enyl-lithium: useful intermediates in the synthesis of unsaturated and bifunctionalized compounds, 3339-44

#### **CUPARENE**

Synthesis of aromatic sesquiterpenes,  $(\pm)$ -cuparene and  $(\pm)$ laurene by means of an intramolecular carbenoid displacement (ICD) reaction, 193-200

#### CUPRATE

Synthesis of 15β-hydroxy-24-oxocholesterol and 15β,29-dihydroxy-7-oxofucosterol, 2161-8 CURTIUS REACTION

Synthesis of enamides, 2185–96 CYANATION

Reaction of  $\alpha$ -substituted  $\beta$ -bromostyrenes with dicarbonyldicyanonickelate(0) anion in alkaline medium under carbon monoxide, 1993-6

#### **CYANOHYDRIN**

Synthesis of (Z)-predominant  $\alpha,\beta$ -unsaturated nitriles from enone cyanohydrin diethyl phosphates: application to the synthesis of  $(\pm)$ -nuciferal,  $(\pm)$ -(*E*)- and -(*Z*)-nuciferol, and  $(\pm)$ -manicone,

#### **CYANOMETHYLATION**

o-Nitroaniline derivatives. Part 9. Benzimidazole N-oxides unsubstituted at N-1 and C-2, 681-90

### **CYCLIC ETHER**

Rhodium carbenoid mediated cyclisations. Part 2. Synthesis of cyclic ethers, 1417-24 CYCLIC VOLTAMMETRY

- Synthesis and properties of cyclohepta[fg]naphth[2,3-a]acenaphthylene-5,12-dione (naphth[2,3-h]acepleiadylene-5,12dione), 1541-6
- New alkoxylated dibenzo[1,4]dichalcogenines as donors for lowdimensional materials: electrochemistry and cation-radical salts, 2095 102 CYCLISATION

- synthesis of benzimidazolyl selenophenes, 1033-8
- Intramolecular free radical cyclisations onto enol ethers. A general synthesis of  $\alpha$ -alkyl- $\beta$ -oxy- and  $\alpha$ -methylene- $\beta$ -oxy- $\gamma$ -butyrolactones, 1095–106

- Rhodium carbenoid mediated cyclisations. Part 2. Synthesis of cyclic ethers, 1417-24
- o-Nitroaniline derivatives. Part 11. 4- and 7-amino-1Hbenzimidazole 3-oxides, 1939-44
- Thermal interconversion and cyclisation reactions of 2-(arylthio)benzyl radicals and 2-(benzyl)thiophenoxyl radicals, 2875-80

#### CYCLIZATION

- Total synthesis of aaptamine of potent *a*-blocking activity via thermal cyclization of 1-azahexatriene systems, 2429-32 **CYCLOADDITION**
- Inter- and intra-molecular photocycloaddition of enol ethers to naphthalene, 31-6
- Reaction of 1,2-benzoquinones with enamines, 151-6
- Cycloadditions of 3H-indoles, 451-6
- Synthetic studies towards the pinguisanes; synthesis of 4-epipinguisone, 471-80
- Photo-induced molecular transformations. Part 87. Ring expansion through [2 + 2] photocycloaddition- $\beta$ -scission sequences synthesis of benzohomotropones from 1- and 2-naphthols and methyl acrylate, 491-6
- X=Y-ZH Systems as potential 1,3-dipoles. Part 9. Aza-allyl anion precursors from the reaction of (1,3-dioxoindan-2ylidene)malononitrile with  $\alpha$ -amino acids and their methyl esters, 541-4
- The regiochemistry and stereochemistry of 1,3-dipolar cycloaddition of a cyclic nitrone, 597-606
- Studies of pyrimidine-2,4-diones: synthesis of novel condensed pyrido[2,3-d]pyrimidines via intramolecular cycloadditions, 607–10
- Synthesis of novel carbo- and hetero-polycycles. Part 7. Synthesis of 6-azatricyclo[6.3.1.0<sup>4.10</sup>]dodecane and 5-azatricyclo[5.3.1.1<sup>3.9</sup>]dodecane derivatives *via* intramolecular cycloaddition of N-{(endo-bicyclo[3.3.1]non-6-en-3yl)methyl}nitrones, 719-24
- 1,3-Dipolar character of six-membered aromatic rings. Part 56. The cycloadditions of acetylenes and 3-oxidopyridinium betaines, 917-20
- Rhodium-catalysed [2 + 2 + 2]-cycloadditions of acetylenes, 1357 64
- Rhodium(1)-catalysed reactions of enynes. Linear coupling vs. cycloaddition, 1365-70
- Chiral synthesis of 3-[(R)-1-hydroxyethyl]-4-oxoazetidin-2-yl acetate using an asymmetric 1,3-dipolar cycloaddition reaction, 1593-8
- Cycloaddition of unactivated 2-aza-1,3-dienes with heterocumulenes: a convenient route to the synthesis of 1,3difunctionalized compounds, 1739-44
- Organic heterocyclothiazenes. Part 7. Chemistry of 1,3,5,2,4,6trithiatriazepines, 1745-8
- Reactive selenoaldehydes formed from selencnyl derivatives by 1,2elimination and trapped in situ as cycloadducts with conjugated dienes, 1913-22
- Reaction of benzyne with 1,2,5-thiadiazoles and 2,1-
- benzisothiazoles, 2141–4 Cycloaddition of 2,3,4,5-tetrahydropyridine *N*-oxide to isobutyl vinyl ether and allyl alcohol; methyl 2-formylmethylpiperidine-1carboxylate, 2251-4
- An approach to (8,3')- and (8,5'.7,3')-neolignans, 2305-8
- Chemistry of ketene acetals. Part 9. A simple 'one-pot' synthesis of dimethoxy-δ-lactones and 5,6-dihydro-2-pyrones from 1,1-dimethoxypropene and β-oxy aldehydes, 2315–22
- Alkylation studies of 5-exo-methylene substituted isoxazolidines, 2639-46
- X=Y-ZH Systems as potential 1,3-dipoles. Part 11. Stereochemistry of 1,3-dipoles generated by the decarboxylative route to azomethine ylides, 2693–702
- X=Y-ZH Systems as potential 1,3-dipoles. Part 12. Mechanism of formation of azomethine ylides via the decarboxylative route from a-amino acids, 2703-14
- The reactions of hydrazones and related compounds with strong bases. Part 4. 4,5-Diaryl-1,2,3-triazoles from aromatic aldehyde azines and from the reaction of arenecarbonitriles with aryldiazomethanes, 2917-20
- Studies on a new route to  $(\pm)$ -copaene and  $(\pm)$ -ylangene, 3223-8
- 1,3-Dipolar cycloadditions of 1-(N-arylidene)amino-1,2,3-triazoles with diphenylnitrilimine, 3233-8
- Thermal fragmentation of 2-azidobenzo[b]thiophene in the

#### CYCLOADDITION (contd)

presence of alkenes: a new synthetic route to 1-(2-benzo[b]thienyl)aziridines and/or thiochromans-4-carbonitriles, 3375-80

#### **CYCLOALKENE**

<sup>3</sup>C Chemical shift assignments in cyclo-octene, cyclo-octanone, and cyclo-oct-2-enol from the spectra of monodeuterioisotopomers, 287--90

#### **CYCLOALKENONE**

A formylation-cyclisation method of synthesis of cycloalkenones from unsaturated ketones. Part 3. Simple synthesis of some functionalised angularly fused cyclopentenone and cyclopentanone derivatives, 795–802

#### **CYCLOBUTARENE**

Cyclobutarenes. Part 3. Synthesis of bromodicyclobutarenes and some new derivatives of the benzocyclobutabiphenylenes, 961-70

#### **CYCLOCONDENSATION**

Polarized ketene dithioacetals. Part 65. Studies on additions of 2aroyl-3-cyano-1,1-bis(methylthio)propenide anions to hetero-multiple bonds, 2365-8 CYCLODECENONE

Structure-reactivity relationships in normal and 19-nor-5,10-secosteroidal cyclodecenone systems. Part 1. Acid-catalyzed and thermal reactions, 1495-8 CYCLODEHYDRATION

Syntheses and properties of some polymethylene bridged adenines, 593-6

Cyclodehydration of non-aromatic diols on Al<sup>III</sup>-montmorillonite clay: reactivity and mechanism, 1749–52 CYCLODIMERISATION

Rhodium(1)-catalysed reactions of enynes. Linear coupling vs. cycloaddition, 1365-70 CYCLOHEXADIENONE

Synthesis of 4-benzoyl-4-methylcyclohexa-2,5-dienone and its benzoyl substituted derivatives: isolated 4-acylcyclohexa-2,5dienones, 1791-8 CYCLOHEXENE

Palladium-catalysed spirocyclisation of 3-acetoxy-1-(4aminoalkyl)cyclohexenes, 2255-8

Stereo- and regio-control of electrophilic additions to cyclohexene systems by neighbouring groups: participation of allylic and homoallylic ester groups in hypobromous acid addition to some unsaturated cholestane derivatives, 2297-304

#### **CYCLOISOEMERICELLIN**

Studies on fungal products. Part 15. Isolation and structure determination of arugosin E from *Aspergillus silvaticus* and cycloisoemericellin from *Emericella striata*, 907–12 CYCLOPALLADIATED AROMATIC IMINES

Cyclopalladiated aromatic imines in organic synthesis: the preparation of cinnamonitriles, cinnamates, unsymmetrical stilbenes, isoquinolones, and isoquinolines, 1317-24 CYCLOPALLADIATION

CYCLOPENTENONE
 Synthesis of 2,3-disubstituted cyclopent-2-en-1-ones from 6-methoxyindanone, 1397-400
 Synthesis of Cyclopent - 2-en-1-ones from 6-methoxyindanone, 1397-400

Synthesis of tetrahydrodicranenone B, 1401-6

### CYCLOPHANE

Syntheses of macrocyclic enzyme models. Part 6. Preparation and guest-binding behaviour of octopus cyclophanes, 1289-300

### CYCLOPROPANE

Synthesis of novel carbo- and hetero-polycycles. Part 8. An efficient and convenient synthesis of adamantylidenevinylidenecyclopropane derivatives, 1047-50

#### **CYCLOREVERSION**

X=Y-ZH Systems as potential 1,3-dipoles. Part 12. Mechanism of formation of azomethine ylides *via* the decarboxylative route from z-amino acids, 2703–14

### Valence isomer interconversion of norbornadienes and

quadricyclanes having an acyl group, 2913-6

### CYCLOTRIPEPTIDE

Endoannular interactions in cysteine-containing cyclotripeptides: one-step synthesis and crystal structure of a tetracyclic aza-cyclol, 2647 - 5

#### **CYMAROSE**

Studies on the constituents of Asclepiadaceae plants. Part 67. Further studies on glycosides with a novel sugar chain containing a pair of optically isomeric sugars, D- and L-cymarose, from

### **CYNÁFOSIDE**

- Studies on the constituents of Asclepiadaceae plants. Part 67. Further studies on glycosides with a novel sugar chain containing a pair of optically isomeric sugars, D- and L-cymarose, from Cynanchum africanum, 2625–32
- CYNÁNCHUM ÁFRICANUM

Studies on the constituents of Asclepiadaceae plants. Part 67. Further studies on glycosides with a novel sugar chain containing a pair of optically isomeric sugars, D- and L-cymarose, from Cynanchum africanum, 2625-32

CYSTEINE

Endoannular interactions in cysteine-containing cyclotripeptides: one-step synthesis and crystal structure of a tetracyclic aza-cyclol, 2647-52

#### CYSTEINESULPHINIC ACID DECARBOXYLASE

Stereochemistry of cysteinesulphinic acid decarboxylase, 1547-50 **CYTIDINE** 

Synthesis of an aromatic hydrocarbon diol epoxide-cytosine adduct, 5'-O-(9-phenylxanthen-9-yl)- $N^4$ -[( $\pm$ )-1 $\beta$ ,2 $\alpha$ ,3 $\alpha$ -triacetoxy-1,2,3,4-tetrahydro-4 $\beta$ -naphthyl]-2'-dcoxycytidine, suitable for incorporation into synthetic oligodeoxyribonucleotides, 2745–50

#### CYTOSINE

- Fluorination of pyrimidines. Part 2. Mechanistic aspects of the reaction of acetyl hypofluorite with uracil and cytosine derivatives, 1203-8
- Reaction of acetyl hypofluorite with pyrimidines. Part 3. Synthesis, stereochemistry, and properties of 5-fluoro-5,6-dihydropyrimidine nucleosides, 2547-54

Synthesis of an aromatic hydrocarbon diol epoxide-cytosine adduct, 5'-O-(9-phenylxanthen-9-yl)- $N^4$ -[( $\pm$ )-1 $\beta$ ,2x,3x-triacetoxy-1,2,3,4-tetrahydro-4 $\beta$ -naphthyl]-2'-deoxycytidinc, suitable for incorporation into synthetic oligodeoxyribonucleotides, 2745–50

#### DALBERGIA NITIDULA

Oligomeric isoflavonoids. Part 1. Structure and synthesis of the first 2,3')-isoflavone-isoflavan dimer, 1227-36

### DAUNÓSAMINE

Synthesis of (L)-daunosamine and related amino sugars, 111-24 DEALKYLATION

- Thionation reactions of diacylketene thioacetals with the Lawesson reagent and analogues, 2085-90
- DEAZĂFLAVIN
  - 1,3,9,11,12,14-Hexa-azapentacene-2,4,8,10(3H,9H,12H,14H)tetraones (doubled 5-deazaflavins) with potential for oxido reduction, 1809-12
  - 2,4,5,8,9,11-Hexa-azapentaphene-1,3,10,12(2H,5H,8H,11H)-tetraones (angular 5-deazapteridino-deazaflavins) with strong oxidizing power, 1813-8

#### DECADIENE

Palladium(11)-catalysed rearrangements of allylic acetates in the syntheses of methyl (10*E*,12*Z*)-9-hydroxyoctadeca-10,12-dienoate (x-dimorphecolate) and (2*E*,4*Z*)-deca-2,4-dienal, 2061–8 **DECARBOXYLASE** 

X=Y-ZH systems as potential 1,3-dipoles. Part 10. The decarboxylative route to azomethine ylides. Background and relevance to pyridoxal decarboxylases, 949-56

#### DECARBOXYLÂTION

- Organic heterocyclothiazenes. Part 7. Chemistry of 1,3,5,2,4,6trithiatriazepines, 1745-8
- X=Y-ZH Systems as potential 1,3-dipoles. Part 11. Stereochemistry of 1,3-dipoles generated by the decarboxylative route to azomethine ylides, 2693–702
- X=Y-ZH Systems as potential 1,3-dipoles. Part 12. Mechanism of formation of azomethine ylides *via* the decarboxylative route from  $\alpha$ -amino acids, 2703–14

### DECHLORINATION

Borohydride-enhanced dechlorination of chlorobenzenes and toluenes, 703–6 DEHYDROCHLORINATION

Synthesis of novel carbo- and hetero-polycycles. Part 8. An efficient and convenient synthesis of adamantylidenevinylidenecyclopropane derivatives, 1047-50 **DEHYDROGENATION** 

### Synthesis of 4-benzoyl-4-methylcyclohexa-2,5-dienone and its benzoyl substituted derivatives: isolated 4-acylcyclohexa-2,5dienones, 1791–8 DEHYDROIODINATION

Regio- and stereo-selective synthesis of  $\beta$ -sulphonyl- $\alpha$ , $\beta$ -unsaturated

- **DEHYDROIODINATION** (contd)
  - carbonyl compounds via an iodosulphonylationdehydroiodination reaction, 1029-32
- DEHYDROXYLATION
- Macroheterocycles. Part 42. A facile synthesis of dihydroxy

cryptands and their dehydroxylation, 2533-6 DEHYDROXYPAXILLINE

- Isolation and structures of indoloditerpenes, possible biosynthetic intermediates to the tremorgenic mycotoxin, paxilline, from
- Emericella striata, 2607-10
- DEHYDROYOHIMBINE

Photocyclisation of enamides. Part 27. Total syntheses of  $(\pm)$ yohimbine  $(\pm)$ -alloyohimbine, and  $(\pm)$ -19,20-

- didehydroyohimbines, 2219-26 DEKETALISATION
  - Simple and condensed β-lactams. Part 9. Elaboration of the 3-(1hydroxyethyl) side chains of potential intermediates of carbapenem antibiotics via the 2-methyl-1,3-dioxolan-2-yl group,

### DEMETHOXYCARBONYLATION

Synthesis of enamides, 2185-96

- DENUDATIN
- An approach to (8,3')- and (8,5'•7,3')-neolignans, 2305-8 DEOXYMITOMYCIN
- Synthesis of 9a-deoxymitomycin congeners, 1143-8 **DEOXYNUCLEOSIDE**

Liquid-liquid and solid-liquid phase-transfer glycosylation of pyrrolo[2,3-d]pyrimidines: stereospecific synthesis of 2-deoxy-β-D-ribofuranosides related to 2'-deoxy-7-carbaguanosine, 697-702

#### DEOXYRADICININ

Studies on the mechanism of polyketide-derived biosynthesis of deoxyradicinin and related metabolites of Alternaria helianthi, 1283 - 8

#### DEOXYRIBONUCLEOTIDE

Synthesis of an aromatic hydrocarbon diol epoxide-cytosine adduct, 5'-O-(9-phenylxanthen-9-yl)-N<sup>4</sup>-[(±)-1β,2x,3x-triacetoxy-1,2,3,4-tetrahydro-4β-naphthyl]-2'-deoxycytidine, suitable for incorporation into synthetic oligodeoxyribonucleotides, 2745-50

#### DEPSIDONE

Isolation and structures of novel fungal depsidones, emeguisins A, B, and C, from Emericella unguis, 2611-4

DERMORPHIN

Opioid agonists and antagonists. Peptides containing N-terminal allyl groups and/or a thiomethylene linkage in place of a peptide bond, 1645-52

#### **DESERTORIN C**

The synthesis of desertorin C, a bicoumarin from the fungus Emericella desertorum, 2425-8

#### DEUTERIATION

- Preparation of deuteriated 1-phenylethanols by reductive dehalogenation of the corresponding halogenoacetophenones with Raney alloys in an alkaline deuterium oxide solution, 179-82
- Aromatization of 7β,17β-diacetoxy-4-methyleneandrost-5-ene, 1461-
- An aromatization reaction of a 13a-methyl steroid, 2005-8
- The mechanism of two reactions leading to isomeric 2-(N,N-
- disubstituted amino)thiazol-5-yl ketones, 2213-8
- <sup>13</sup>C Chemical shift assignments in cyclo-octene, cyclo-octanone, and cyclo-oct-2-enol from the spectra of monodeuterioisotopomers, 2287-90

#### **DEUTERIUM OXIDE**

Preparation of deuteriated 1-phenylethanols by reductive dehalogenation of the corresponding halogenoacetophenones with Raney alloys in an alkaline deuterium oxide solution, 179-82

#### **DEWAR PYRIMIDINONE**

Photochemistry of 5-methylpyrimidin-4-ones in acetic acid solution: thermal rearrangements of Dewar pyrimidinones and 4-acetoxyazetidin-2-ones, 2653–62

#### DIAMINOCARBAZOLE

Sulphur nitride in organic chemistry. Part 17. Preparation of 1,8diaminocarbazole, 1869–74

### DIANION

Unusual stereoselection in the reaction of dianions derived from 1phenylsulphonylalkan-2-ols with electrophilic reagents, 2397-402

- DIATROPISM
- Synthesis and properties of methano-bridged tetradehydro-[26]-, -[28]-, -[30]-, -[32]-, -[34]-, and -[38]-annulene, 385-94 DIAZABICYCLONONADIENE
- Synthesis of tetrahydropyrimidines with 2-oxoalkyl groups using pyrimidinium salts and enol silyl ethers: formation of diazabicyclo[3.3.1]nona-3,6-diene derivatives, 725-32

**DIAZACROWN ETHER** 

Macroheterocycles. Part 42. A facile synthesis of dihydroxy cryptands and their dehydroxylation, 2533-6

- DIAZÁPENTADIENE Thermolysis of polyazapentadienes. Part 8. The formation of pyrroles from 1,1-dialkyl-5-aryl-1,5-diazapentadienes,
- DIAZEPINE
- Cyclic guanidines. Part 2. Rearrangement of N-substituted 2-arylamino-4,5,6,7-tetrahydro-1H-1,3-diazepines. X-Ray molecular structure of 1-(2,6-dichlorophenyl)-2-(2-methylallylimino)hexa-hydro-1,3-diazepine, 3311-6
- DIAZO
- A novel synthesis of pyrrolizidine alkaloids by means of an intramolecular carbenoid displacement (ICD) reaction, 833-8
- DIAZOALKANE
- Reactions of tetrafluoroethene oligomers. Part 7. Some reactions of 4-diazo-1,1,1,2,2-pentafluoro-3-pentafluoroethyl-3trifluoromethylbutane, 555-8
- Thermally induced rearrangement of

thiopheniobis(alkoxycarbonyl)methanides, 803-8 **DIAZOMETHYL KETÖNE** 

- Vinylogous Wolff rearrangement of cyclic  $\beta$ , $\gamma$ -unsaturated diazomethyl ketones: a new synthetic method for angularly functionalised polycyclic systems, 939-44
- DIBAL

A formal total synthesis of  $(\pm)$ -herbertene, 2485-90 DIBENZODICHALCOGENINE

- New alkoxylated dibenzo[1,4]dichalcogenines as donors for lowdimensional materials: electrochemistry and cation-radical salts, 2095-102
- DICHALCOGENINE

New alkoxylated dibenzo[1,4]dichalcogenines as donors for lowdimensional materials: electrochemistry and cation-radical salts, 2095 - 102

- DICTYOTA LINEARIS
  - Synthetic radical chemistry. Total synthesis of  $(\pm)$ -isoamijiol, 1085-94

#### DIELS-ALDER

- Retrodienic reactions. Part 2. Vinyl- and propenyl-phosphines: synthesis by flash vacuum thermolysis and characterization, 99-
- A new precursor to 3,4-didehydropyridine, and its use in the
- synthesis of the antitumour alkaloid ellipticine, 247-50 Synthetic studies towards the pinguisanes; synthesis of 4-epipinguisone, 471-80
- Synthetic approaches to the thiathromboxanes. Part 1. Preparation of functionalised dihydrothiopyrans, 663-74 Diels-Alder reactivity of pyrano[3,4-b]indol-3-ones. Part 2. Steric
- and electronic effects in the addition to alkynes, 1407-16
- Reactive selenoaldehydes formed from selenenyl derivatives by 1,2elimination and trapped in situ as cycloadducts with conjugated dienes, 1913-22
- Synthesis and acetylation of naphthols as precursors to naturally derived naphthoquinones; crystal structure of the aphin-related 7-O-methyl Quinone A, 2459-68
- An enantioconvergent route to carbocyclic nucleosides (-)aristeromycin and (-)-neplanocin A via the asymmetric Diels-Alder reaction, 3133-40
- Preparation, properties, and some chemical reactions of phenaleno[1,9-bc]furan, 3169-74
- Diels Alder reactivity of pyrano[3,4-b]indol-3-ones. Part 3. Intramolecular Diels-Alder reactions, 3249–54
- Antifertility agents: a synthetic entry to yuehchukene analogues; stereoselective synthesis of 7,7-bis-nor-yuehchukene *via* 9-methyl-6-oxo-6aβ-7.8,10aβ-tetrahydroindeno[2,1-b]indole. 3317-2
- **DIELS-ALDER REACTION** 
  - Asymmetric Diels-Alder reactions. Part 1. Diastereofacial reactivity of (E)-3-trimethylsilyloxybuta-1,3-dienyl 2,3,4,6-tetra-O-acetyl-β-D-glucopyranoside towards cyclic dienophiles, 1773-86
  - Asymmetric synthesis of trans-benzoperhydroindan: asymmetric

#### **DIELS-ALDER REACTION** (contd)

induction in intramolecular Diels-Alder reactions of oquinodimethanes, 2835-8

#### DIENAMINE

- Thermolysis of polyazapentadienes. Part 9. Gas phase thermolyses of some dienamines, enaminones, and enaminothiones, 339-42 DIENE
- Synthesis of allyl and dienyl sulphones via lodosulphonylation of conjugated dienes, 981-2
  - Regioreversed nucleophilic substitution of 2-(allyloxy)benzothiazole by allylic Grignard reagents. A regioselective synthesis of 1,5dienes, 1301-4

#### DIENEDIOLATE

Dienediolates from unsaturated carboxylic acids: Michael addition of dilithium buta-1,3-diene-1,1-diolate (from crotonic acid) to unsaturated ketones, 1711-8

#### DIENONE

Aldol reaction of reducing sugars. Convenient stereoselective synthesis of ribofuranosylacetone and chiral dienones, 2861–4 DIETHYLAMINOSULPHUR TRIFLUORIDE

Use of diethylaminosulphur trifluoride (DAST) in the preparation of synthons of carbocyclic nucleosides, 549-54

#### DIGITÓXOSE

Identification of the absolute stereochemistry of D- and L-digitoxose using a chiral high-pressure liquid chromatography column, 2621-4

#### DIGLYCIDYL ETHER

Macroheterocycles. Part 42. A facile synthesis of dihydroxy cryptands and their dehydroxylation, 2533–6 DIHYDRO-OROTATE DEHYDROGENASE

- Latent inhibitors. Part 4. Irreversible inhibition of dihydro-orotate dehydrogenase by hydantoins derived from amino acids, 3175-82 DIISOCYANOADOCIÁNE
- Biosynthesis of diisocyanoadociane, a novel diterpene from the marine sponge Amphimedon sp. crystal structure of a monoamide derivative, 1003-12

#### DIKETONE

- The synthesis and chemistry of azolenines. Part 8. The Paal-Knorr reaction with cyclic 2-(acylmethyl)-2-alkyl-1,3-diketones: isolation of 1-acy1-1*H*-pyrroles *via* rearrangement, 161-8 $\beta$ -Diketone interactions. Part 6. X-Ray molecular structure of 3-(4-
- methoxyphenyl)pentane-2,4-dione, a  $\beta$ -diketone enol tautomer with a very strong hydrogen bond, 297-300
- Carotenoids and related compounds. Part 40. Synthesis of trikentriorhodin and other  $\beta$ -diketones, 1371-82
- Nucleophilic addition to tricarbonyliron complexes of  $\alpha$ , $\beta$ unsaturated ketones and the production of 1,4-diketones, 2091-

#### DIMERIZATION

Nitrogen bridgehead compounds. Part 74. Cyclization of 2-(2pyridylaminomethylene)succinates in ethanolic sodium ethoxide. Part 2. Michael addition of pyridylatical art 2. Michael addition of pyridyldihydropyrrolones, 2019–22

#### DIMORPHECOLATE

Palladium(11)-catalysed rearrangements of allylic acetates in the syntheses of methyl (10*E*,12*Z*)-9-hydroxyoctadeca-10,12-dienoate (z-dimorphecolate) and (2*E*,4*Z*)-deca-2,4-dienal, 2061-8 **DIMROTH REARRANGEMENT** 

Syntheses and properties of some polymethylene bridged adenines, 593 6

### **DIOL EPOXIDE**

Synthesis of an aromatic hydrocarbon diol epoxide-cytosine adduct, 5'-O-(9-phenylxanthen-9-yl)-N<sup>4</sup>-[(±)-1β,2α,3α-triacetoxy-1.2,3,4-tetrahydro-4β-naphthyl]-2'-deoxycytidine, suitable for incorporation into synthetic oligodeoxyribonucleotides, 2745-50 DIOXABICYCLO-OCTANE

A novel hydroxylactone from the Lewis acid catalysed pyrolysis of cellulose, 49-52

#### DIOXANE

- Heterocycles from carbohydrate precursors. Part 41. Mode of formation of 1,3-dioxolanes and 1,3-dioxanes from 1-C-
- substituted glycerols during their benzylidenation, 139-44 DIOXOLANE
- Heterocycles from carbohydrate precursors. Part 40. Kinetic and thermodynamic products of ketalation of 1-C-substituted L-threoglycerol: a regioselective formation of 1,3-dioxolanes, 133-8
- Heterocycles from carbohydrate precursors. Part 41. Mode of formation of 1,3-dioxolanes and 1,3-dioxanes from 1-Csubstituted glycerols during their benzylidenation, 139–44

#### DIPEPTIDE

Solid state and solution conformation of phenylacetyl-L-cysteinyl-D-penicillamine cyclic disulphide methyl ester; a cyclic dipeptide containing a trans amide, 365-72

### **DIPHENYL ETHER**

- A novel, simple method for the preparation of hindered diphenyl ethers, 3229-32
- DIPHENYLNITRILIMINE

1,3-Dipolar cycloadditions of 1-(N-arylidene)amino-1,2,3-triazoles with diphenylnitrilimine, 3233-8

#### DIPOLAR CHARACTER

1,3-Dipolar character of six-membered aromatic rings. Part 56. The cycloadditions of acetylenes and 3-oxidopyridinium betaines, 917-20

#### DIPOLAR CYCLOADDITION

The regiochemistry and stereochemistry of 1,3-dipolar cycloaddition of a cyclic nitrone, 597-606

- DIPOLE
  - X=Y-ZH systems as potential 1,3-dipoles. Part 10. The decarboxylative route to azomethine ylides. Background and relevance to pyridoxal decarboxylases, 949-56

#### DIPYRRIN

- Synthetic studies relevant to biosynthetic research on vitamin B Part 6. Synthesis of chlorins by a photochemical approach, 1557-68
- Synthetic studies relevant to biosynthetic research on vitamin  $B_{12}$ . Part 7. Synthesis of  $(\pm)$ -bonellin dimethyl ester, 1569-76
- Synthetic studies relevant to biosynthetic research on vitamin  $B_{12}$ . Part 8. Synthesis of (±)-Faktor-I octamethyl ester, 1577-86

#### DISACCHARIDE

- N.m.r. and conformational studies on some 1,3-linked disaccharides, 209-18
- N.m.r. and conformational studies of some 1,4-linked disaccharides, 889-98
- N.m.r. and conformational studies of the methyl glycosides of some 1,2- and 1,3-linked disaccharides, 2729-36

#### **DISPLACEMENT REACTION**

The synthesis of di- and tri-arylamines through halogen displacement by base-activated arylamines: comparison with the Ullmann condensation, 1331-6

#### DISSOCIATIVE SUBSTITUTION

A stereochemical study of the dissociative substitution reactions of N-(S)-α-phenylethyl-P-t-butylphosphonamidic chloride with t-butylamine and isopropylamine, 2737-44

#### DISULPHIDE

- Solid state and solution conformation of phenylacetyl-L-cysteinyl-D-penicillamine cyclic disulphide methyl ester; a cyclic dipeptide containing a trans amide, 365-72
- Regioselective synthesis of hydroxy sulphides via trifluoroacetoxysulphenylation of derivatives of allylic alcohols, 2509-16 Trifluoroacetoxysulphenylation of unsaturated nitriles and
- transformation of the adducts into lactones, 2523-32
- DITERPENE
  - Total synthesis of (+)-pisiferic acid, 931–8
  - Biosynthesis of diisocyanoadociane, a novel diterpene from the marine sponge Amphimedon sp. crystal structure of a monoamide derivative, 1003-12
  - Synthetic radical chemistry. Total synthesis of ( $\pm$ )-isoamijiol, 1085-

Partial synthesis of 4-*epi*-trachylobagibberellin  $A_{12}$ , 1513–6 Sclerophytins A and B. Isolation and structures of novel cytotoxic diterpenes from the marine coral Sclerophytum capitalis, 2537-40

#### DITERPENOID

Synthesis of an Alberta oil sand bitumen C<sub>20</sub> tricyclic carboxylic acid bearing a novel diterpenoid skeleton, 2323-8

#### DITHIACINE

Solid state and solution conformation of phenylacetyl-L-cysteinyl-D-penicillamine cyclic disulphide methyl ester; a cyclic dipeptide containing a trans amide, 365-72

#### DITHIANE

Reactions of metallated 1,3-dithianes with carboxylic acid derivatives, 269–76 DITHIAZOLIUM

The synthesis and properties of some novel 5-amino-1,4,2dithiazolium salts and the X-ray molecular structure of 5morpholino-3-(4-nitrophenyl)-1,4,2-dithiazolium fluoroborate, 899–906

#### DITHINETHIONE

Preparation and properties of novel sulphur heterocycles from the reaction of 4,5-disubstituted 2-lithio-1,3-dithioles with carbon disulphide and X-ray crystallographic structure of 2-(4,5 dimethyl-1,3-dithiolylidene)-5,6-dimethyl-2,3-dihydro-1,4-dithiine--thione, 2751-6

#### DITHIOCARBAMATE

The synthesis and properties of some novel 5-amino-1,4,2dithiazolium salts and the X-ray molecular structure of 5morpholino-3-(4-nitrophenyl)-1,4,2-dithiazolium fluoroborate, 899-906

### DITHIOCARBONATE

On the mechanism of reductive degradation of dithiocarbonates by tributylstannane, 1517-20

#### DITHIOLANE

Stereoselectivity during fungal sulphoxidations of 1,3-dithiolanes, 2827 -30

#### DITHIOLE

Preparation and properties of novel sulphur heterocycles from the reaction of 4,5-disubstituted 2-lithio-1,3-dithioles with carbon disulphide and X-ray crystallographic structure of 2-(4,5dimethyl-1,3-dithiolylidene)-5,6-dimethyl-2,3-dihydro-1,4-dithiinethione, 2751-6

### DITHIOLOQUINOLINONE

Reactions of thionyl chloride with C-methyl heterocycles. Part 2. The formation of [1,2]dithiolo[3,4-c]quinolin-1-ones and bis[dichloro(4-quinolyl)methyl]trisulphanes from 4-methyl-quinolines, 3025-8

#### DUNNIANIN

New pseudoanisatin-like sesquiterpene lactones from the bark of Illicium dunnianum, 1537-40

#### DYE

- Novel syntheses of naphthoquinone methide near-infrared dyes, 2439-42
- Octa-alkoxy phthalocyanine and naphthalocyanine derivatives: dyes with Q-band absorption in the far red or near infrared, 2453 - 8
- Triphenylmethane dye ethynologues with absorption bands in the near infrared, 3155-62

#### **ECDYSONE**

- Synthesis of putative precursors of ecdysone. Part 3. Synthesis of 3β,14α,25-trihydroxy-5β-cholest-7-en-6-one, 2353-64 ELECTROCHEMICAL OXIDATION
- Radical cations. Part 2. Oxidative dimerization of indolizines: a chemical and electrochemical investigation, 3067-70

### **ELECTROCYCLIC REACTION**

Synthetic studies relevant to biosynthetic research on vitamin B, Part 6. Synthesis of chlorins by a photochemical approach, 1557-68

#### ELECTROCYCLIC RING CLOSURE

- Synthesis of chrysenes and other a-fused phenanthrenes by a palladium(0) coupling-electrocyclic ring closure sequence, 595-602
- Synthesis of aromatic steroids by palladium(0) coupling and electrocyclic ring closure, 2603-6 ELECTRON TRANSFER

Studies on fluoroalkylation and fluoroalkoxylation, Part 28 Palladium(0)-induced addition of fluoroalkyl iodides to alkanes: an electron transfer process, 563–8 ELECTRO-OXIDATION

Synthesis and photochemistry of 3,6-difluoro-10,11-benzopentacyclo[6,4,0.0<sup>2,7</sup>,0<sup>3,12</sup>.0<sup>6,9</sup>]dodeca-4,10-diene, 3307-10

#### ELECTROPHILE

Stable 2-thianaphthalenes: synthesis and reactions with electrophiles, 1885-96

- Reactivity and chemoselectivity of primary Z-β-enamino-λ<sup>5</sup>-phosphazenes towards electrophiles, 2329-34
- Unusual stereoselection in the reaction of dianions derived from 1phenylsulphonylalkan-2-ols with electrophilic reagents, 2397 402
- The chemistry of organolead(IV) tricarboxylates. Synthesis and electrophilic heteroarylation reactions of 2- and 3-thienyl-, and 2and 3-furyl-lead tricarboxylates, 2415-22

#### ELECTROPHILIC

N-Halogeno compounds. Part 9. N-Fluoroquinuclidinium fluoride-a new electrophilic fluorinating agent, 2805-12

#### ELECTROPHILIC ADDITION

Stereo- and regio-control of electrophilic additions to cyclohexene

systems by neighbouring groups: participation of allylic and homoallylic ester groups in hypobromous acid addition to some 5-unsaturated cholestane derivatives, 2297-304

### **ELECTROPHILIC ALKENE**

- A stereocontrolled approach to electrophilic epoxides, 2663-74 ELECTROPHILIC SUBSTITUTION Nucleosides. Part 5. Isolation and characterization of the stable
- cyclic adducts, (5R,6S)- and (5S,6S)-bromo- $O^6,5'$ -cyclo-5,6-dihydrouridines in the bromination of 2',3'-Oisopropylideneuridine with N-bromosuccinimide, 2227-32
- ELLIPTICINE
- A new precursor to 3,4-didehydropyridine, and its use in the synthesis of the antitumour alkaloid ellipticine, 247-50
- Chemistry of 6H-pyrido[4,3-b]carbazoles. Part 12. Synthesis of potential bisintercalating drugs bearing two ellipticine units, 2933-44
- Chemistry of 6H-pyrido[4,3-b]carbazoles. Part 13. Syntheses of ring-A- and ring-D-substituted ellipticines, 2945-54
- **EMEGUISIN**
- Isolation and structures of novel fungal depsidones, emeguisins A, B, and C, from *Emericella unguis*, 2611–4 *EMERICELLA DESERTORUM*
- - Studies on fungal products. Part 17. Isolation and structures of novel indoloditerpenes, emindoles DA and DB, from Emericella desertorum: X-ray molecular structure of emindole DA acetate, 1689-94
- The synthesis of desertorin C, a bicoumarin from the fungus Emericella desertorum, 2425-8 EMERICELLA STRIATA

- Studies on fungal products. Part 15. Isolation and structure determination of arugosin E from Aspergillus silvaticus and cycloisoemericellin from Emericella striata, 907-12
- Studies on fungal products. Part 19. Isolation and structure of a novel indoloditerpene, emindole SA, from Emericella striata, 2155 - 60
- Isolation and structures of indoloditerpenes, possible biosynthetic intermediates to the tremorgenic mycotoxin, paxilline, from Emericella striata, 2607-10
- **EMERICELLA UNGUIS**
- Isolation and structures of novel fungal depsidones, emeguisins A, B, and C, from Emericella unguis, 2611-4

**EMINDOLE** 

- Studies on fungal products. Part 17. Isolation and structures of novel indoloditerpenes, emindoles DA and DB, from *Emericella desertorum: X-*ray molecular structure of emindole DA acetate, 1689-94
- Studies on fungal products. Part 19. Isolation and structure of a novel indoloditerpene, emindole SA, from Emericella striata, 2155-60

#### **EMINDOLE SB**

Isolation and structures of indoloditerpenes, possible biosynthetic intermediates to the tremorgenic mycotoxin, paxilline, from Emericella striata, 2607–10

- **ENAMIDE**
- Synthesis of enamides, 2185-96
- **ENĂMINE**
- Reaction of 1,2-benzoquinones with enamines, 151-6
- Reactivity and chemoselectivity of primary Z- $\beta$ -enamino- $\lambda^5$ phosphazenes towards electrophiles, 2329-34
- **ENAMINONE**

Thermolysis of polyazapentadienes. Part 9. Gas phase thermolyses of some dienamines, enaminones, and enaminothiones, 339-42 **ENANTIOCONVERGENT SYNTHESIS** 

An enantioconvergent route to carbocyclic nucleosides (-)aristeromycin and (-)-neplanocin A via the asymmetric Diels-Alder reaction, 3133-40

ENANTIOSELECTIVE HYDROLYSIS

Resolution of bicyclo[3.2.0]hept-2-en-6-ols and bicyclo[4.2.0]oct-2-en-endo-7-ol using lipases, 3387–90 ENANTIOSELECTIVITY

Enantioselectivity of the microsomal epoxide hydrolase: hydrolysis of  $(\pm)$ -cis-3-bromo-1,2-epoxycyclohexane, 2715–20 ENDOTOXIN

Chemistry of bacterial endotoxins. Part 4. Synthesis of anomeric 2deoxy-2-[(3R)-3-hydroxytetradecanamido]-D-glucopyranosyl phosphate and pyrophosphate derivatives related to 'Lipid A', 243-50

#### ENDOTOXIN ANALYSIS

Phosphorylated sugars. Part 24. Methyl 3-deoxy-a-D-manno-oct-2-

#### ENDOTOXIN ANALYSIS (contd)

ulopyranosidonic acid 4-(dihydrogen phosphate): synthesis, stability in acidic medium, and colorimetric estimation, 707-10

### ENE ADDUCT

Preparation and chemical behaviour of exo-methylene compounds: isoelectronic compounds of 5-methylenecyclohexa-1,3-diene,

#### 2579-84 ENECARBAMATE

- Synthesis of enamides, 2185-96
- ENE REACTION
- Intramolecular ene reaction of the unsaturated acyloin 3-(but-3enyl)-2-hydroxy-3-methylcyclohexanone, 2033-6
- **ENERGY CONVERSION** 
  - Valence isomer interconversion of norbornadienes and
- quadricyclanes having an acyl group, 2913-6 **ENOL ETHER**
- Inter- and intra-molecular photocycloaddition of enol ethers to naphthalene, 31-6
- Intramolecular free radical cyclisations onto enol ethers. A general synthesis of  $\alpha$ -alkyl- $\beta$ -oxy- and  $\alpha$ -methylene- $\beta$ -oxy- $\gamma$ -butyrolactones, 1095–106
- Synthesis of ketofuranosides by epoxidation-ring closure of enol ethers. 3353-8
- ENOL TAUTOMER
- β-Diketone interactions. Part 6. X-Ray molecular structure of 3-(4-methoxyphenyl)pentane-2,4-dione, a β-diketone enol tautomer with a very strong hydrogen bond, 297-300

#### **ENONE**

- Oxidations of enone systems in steroids by oxidizers with reversible redox potential, 2687-92
- Unsaturated carboxylic acid polyenolates. Lithium trienolate of sorbic acid as a d<sup>6</sup> synthon: addition to ketones and unsaturated ketones, 2797-804

#### **ENYNES**

Rhodium(1)-catalysed reactions of enynes. Linear coupling vs. cycloaddition, 1365-70

ENZÝME ASSAÝ

- Stereochemistry of cysteinesulphinic acid decarboxylase, 1547-50 **ENZYME INHIBITIÓN**
- Latent inhibitors. Part 4. Irreversible inhibition of dihydro-orotate dehydrogenase by hydantoins derived from amino acids, 3175-

#### **ENZYME INHIBITOR**

- Synthesis of analogues of 6β-bromopenicillanic acid and penicillanic acid S,S-dioxide. Part 1. Synthesis of  $3\alpha$ -derivatives of  $6\beta$ -bromo-2.2-dimethylpenam and 2,2-dimethylpenam S,S-dioxide, 1551-6
- **ENZYME MECHANISM** Studies on the mechanism of lysine 2,3-aminomutase, 343-50 **ENZYME MODEL**
- Syntheses of macrocyclic enzyme models. Part 6. Preparation and guest-binding behaviour of octopus cyclophanes, 1289–300 ENZYMIC REACTION
- Mechanistic consideration of P-450 dependent enzymic reactions: studies on oestriol biosynthesis, 2043-52

**EPIDIOXYPYRAZINONÉ** 

Synthesis of stable 3,6-epidioxypyrazin-2-ones and a-oxo imides by photo-oxygenation of pyrazin-2-ones with singlet oxygen, 2921-6 EPOXIDATION

- Stereochemistry of epoxidation of some A-norandrost-5-enes, 1473 6
- Preparation of steroidal 5β,6β-epoxides and their oxidation by chromium trioxide, 2001–4
- Synthesis of 15β-hydroxy-24-oxocholesterol and 15β,29-dihydroxy-7-oxofucosterol, 2161-8
- Epoxidation with pyridine--trifluoroacetic anhydride-molecular oxygen and its mechanistic aspects, 2335-8
- A stereocontrolled approach to electrophilic epoxides, 2663-74 Synthesis of ketofuranosides by epoxidation-ring closure of enol
- ethers, 3353-8 **EPOXIDE** 
  - A new eudesmenolide and 2-hydroxycostic acid from Sphaeranthus indicus Linn. X-Ray molecular structure of  $4\alpha$ ,  $5\alpha$ -epoxy- $7\alpha$ hydroxyeudesmanolide, 157-60
- Molecular rearrangement of 3-substituted 4-chloro-4,5-epoxide systems in ring A of steroids, 1961-72 EPOXIDE HYDROLASE

Enantioselectivity of the microsomal epoxide hydrolase: hydrolysis of  $(\pm)$ -cis-3-bromo-1,2-epoxycyclohexane, 2715-20

**EPOXYCYCLOHEXANE** 

Enantioselectivity of the microsomal epoxide hydrolase: hydrolysis of  $(\pm)$ -cis-3-bromo-1,2-epoxycyclohexane, 2715-20

- EQUILIBRIUM EXCHANGE
  - Amberlyst 15, a superior, mild, and selective catalyst for carbonyl regeneration from nitrogeneous derivatives, 2563-6

### ERGOSTEROL

artanol in tissue cultures of higher plants and of ergosterol in yeast from [1,2-<sup>13</sup>C<sub>2</sub>]- and [2-<sup>13</sup>C<sup>2</sup>H<sub>3</sub>]-acetate and [5-<sup>13</sup>C<sup>2</sup>H<sub>2</sub>]MVA, 2407-14 ERIVANIN Biosynthesis of sitosterol, cycloartenol, and 24-methylenecyclo-

Synthesis of erivanin and 1-epierivanin from 1-(a)-santonin, 2633-8 ERÝTHROSE

Stereoselective condensation of bis-p-tolylthiomethane with lactic acid derivatives through an acylation-reduction strategy: synthesis of protected 4-deoxy-L-threose and 4-deoxy-L-erythrose, 2369-76

#### E.S.R.

- Studies on fluoroalkylation and fluoroalkoxylation, Part 28. Palladium(0)-induced addition of fluoroalkyl iodides to alkanes: an electron transfer process, 563-8
- ESTER
  - Samarium(11) di-iodide induced reductive coupling of  $\alpha,\beta$ unsaturated esters with carbonyl compounds leading to a facile synthesis of y-lactone, 1669-76
- ESTER ENOLATE
- Reaction of silvlimines with ester enolates. Synthesis of Nunsubstituted azetidinones starting from nitriles, 945-8
- ESTRADIENONE
- 10β-Chloro-17β-hydroxyestra-1,4-dien-3-one and its related compounds, 457-60
- ESTRATRIENE
- An aromatization reaction of a 13a-methyl steroid, 2005-8 ESTRONE
- Synthesis of aromatic steroids by palladium(0) coupling and electrocyclic ring closure, 2603-6
- EUDESMANEDIOL
- Approach to the synthesis of side-chain eudesmanediols: synthesis of kudtriol from  $1-(\alpha)$ -santonin, 3149-54
- EUDESMANOLIDE

Synthesis of erivanin and 1-epierivanin from  $1-(\alpha)$ -santonin, 2633-8 EUDESMENOLIDE

- A new eudesmenolide and 2-hydroxycostic acid from Sphaeranthus indicus Linn. X-Ray molecular structure of 4a,5a-epoxy-7ahydroxyeudesmanolide, 157-60
- Synthesis of erivanin and 1-epierivanin from  $1-(\alpha)$ -santonin, 2633 - 8
- **FAKTOR-I**

Synthetic studies relevant to biosynthetic research on vitamin  $B_{12}$ . Part 8. Synthesis of  $(\pm)$ -Faktor-I octamethyl ester, 1577-86 FAVORSKII REACTION

- Synthesis of  $13\alpha$ -steroids. A new route to 16-substituted  $13\alpha$ androstanes, 23-30
- FLASH VACUÚM PYROLYSIS
  - Intramolecular nitrene insertions into aromatic and heteroaromatic rings. Part 8. Flash vacuum pyrolysis of 2-azidobenzylpyridines, 69-76
  - Thermal interconversion and cyclisation reactions of 2-(arylthio)benzyl radicals and 2-(benzyl)thiophenoxyl radicals, 2875--80
- FLAVANOID
  - Oligomeric flavanoids. Part 1. Novel dimeric profisetinidins from Colophospermum mopane, 1325-30
  - Oligomeric flavanoids. Part 2. The first profisetinidins with dihydroflavonol constituent units, 2567–72
  - Oligomeric flavanoids. Part 3. Structure and synthesis of phlobatannins related to (-)-fisetinidol- $(4\alpha, 6)$ - and  $(4\alpha, 8)$ -+)-catechin profisetinidins, 3323-30
  - Oligomeric flavanoids. Part 4. Base-catalysed conversions of (-)-fisetinidol-(+)-catechin profisetinidins with 2,3-trans-3,4cis-flavan-3-ol constituent units, 3331-8
- FLAVANOL
  - Stereoselective C-4 functionalisation of flavan-3-ols. The significance of conformational mobility of the flavan heterocycle in stereoselectivity at the benzylic carbon, 2179 84

**FLAVIN** 

Coenzyme models. Part 45. Synthesis of atropisomeric flavins and their novel redox-induced racemisation, 313-20

#### **FLAVONOID**

- [2',2']-(+)-Catechin-(+)-taxifolin from commercial willow bark: structure, bonding positions and oxidative cleavage, 219-26
- **FLAVONOL** 
  - Oligomeric flavanoids. Part 2. The first profisetinidins with dihydroflavonol constituent units, 2567-72
- FLUORINATING AGENT
- N-Halogeno compounds. Part 9. N-Fluoroquinuclidinium fluoride—a new electrophilic fluorinating agent, 2805–12 FLUORINATION
- Use of diethylaminosulphur trifluoride (DAST) in the preparation of synthons of carbocyclic nucleosides, 549-54
- Fluorination of pyrimidines. Part 2. Mechanistic aspects of the reaction of acetyl hypofluorite with uracil and cytosine derivatives, 1203-8
- meso-Reactivity of porphyrins and related compounds. Part 10. Direct fluorination of octaethylporphyrin with caesium fluoroxysulphate, 1735-8
- Reaction of acetyl hypofluorite with pyrimidines. Part 3. Synthesis, stereochemistry, and properties of 5-fluoro-5,6-dihydropyrimidine nucleosides, 2547-54

#### FLUORINE

- Mechanisms for reactions of halogenated compounds. Part 5. Orientating effects of fluorine substituents on nucleophilic substitution in naphthalene and other polycyclic systems, 251 - 4
- Mechanisms for reactions of halogenated compounds. Part 6. Investigations into the activating effect of ortho-fluorine in nucleophilic aromatic substitution, 255-8

#### **FLUORO**

Homochiral fluoro-organic compounds. Microbial reduction of 1fluoro-3-(p-tolylsulphonyl)propan-2-one and of 1-fluoro-3-(ptolylsulphenyl)propan-2-one, 2831-4

#### FLUOŘOALKEŇÉ

Reactions of tetrafluoroethene oligomers. Part 7. Some reactions of 4-diazo-1,1,1,2,2-pentafluoro-3-pentafluoroethyl-3trifluoromethylbutane, 555-8

### **FLUOROALKOXYLATION**

Studies on fluoroalkylation and fluoroalkoxylation, Part 28. Palladium(0)-induced addition of fluoroalkyl iodides to alkanes: an electron transfer process, 563--8 FLUOROALKYLATION

Sodium perfluoroalkane carboxylates as sources of perfluoroalkyl groups, 921-6 FLUOROAROMATIC

- Polyhalogenoaromatic compounds. Part 53. Substitution in polyfluoroaromatic compounds by bulky nucleophiles, 3301-6
- FLUOROCARBANION Reactions involving fluoride ion. Part 34. Stable perfluorinated
- carbanions, 201-8 FLUOROIMMUNOASSAY
  - The synthesis of a conjugate of progesterone with Lucifer Yellow VS: a potential probe for fluoroimmunoassay of steroids, 2979

#### **FLUOROMETHANETHIOLATE ION**

- Trifluoromethanethiolate ion. Part 3. Reactions with
- tetrafluoropyridazine and tetrafluoropyrimidine, 1179-82

### FLUOROPHENYL

An investigation of potential [2,3]-sigmatropic rearrangements of pentafluorophenyl-aza-, -thio-, and -methylene-sulphonium ylides, 2023-6

#### FLUOROQUINUCLIDINIUM FLUORIDE

- N-Halogeno compounds. Part 9. N-Fluoroquinuclidinium
- fluoride—a new electrophilic fluorinating agent, 2805-12 **FRAGMENTATION**

A novel, base-induced fragmentation of Hantzsch-type 4-aryl-1,4dihydropyridines, 1837-44

### FREE ŘADÍČAL

- Regioselective formation of amidocarboxy-substituted free radicals, 265-8
- Initiation mechanisms in radical polymerization: reaction of t-
- butoxy radicals with allyl acrylate and with diallyl ether, 485-90 Synthetic radical chemistry. Total synthesis of  $(\pm)$ -isoamijiol, 1085-94
- Intramolecular free radical cyclisations onto enol ethers. A general synthesis of  $\alpha$ -alkyl- $\beta$ -oxy- and  $\alpha$ -methylene- $\beta$ -oxy- $\gamma$ -butyrolactones, 1095–106
- Conjugate addition with organometallics and nitration of nitroxide

(aminoxyl) free radicals. Synthesis of potentially useful crosslinking spin label reagents, 2905–12 FRIEDEL-CRAFTS ACYLATION

Synthesis of linear ethyl 9-methoxy-1H-benz[f]indole-2carboxylate, 3005-12 FRIES REARRANGEMENT

- Synthesis of 4-benzoyl-4-methylcyclohexa-2,5-dienone and its benzoyl substituted derivatives: isolated 4-acylcyclohexa-2,5dienones, 1791-8
- FUCOSTEROL

Synthesis of 15β-hydroxy-24-oxocholesterol and 15β,29-dihydroxy-7-oxofucosterol, 2161-8

#### FUNGAL METABOLITE

- Studies on the mechanism of polyketide-derived biosynthesis of deoxyradicinin and related metabolites of Alternaria helianthi, 1283-8
- Studies on fungal products. Part 17. Isolation and structures of novel indoloditerpenes, emindoles DA and DB, from *Emericella* desertorum: X-ray molecular structure of emindole DA acetate, 1689-94
- The synthesis of desertorin C, a bicoumarin from the fungus Emericella desertorum, 2425-8
- Isolation and structures of novel fungal depsidones, emeguisins A, B, and C, from Emericella unguis, 2611-4
- Stereoselectivity during fungal sulphoxidations of 1,3-dithiolanes, 2827-30

#### **FUNGAL PRODUCT**

Studies on fungal products. Part 19. Isolation and structure of a novel indoloditerpene, emindole SA, from Emericella striata, 2155-60

#### FURAN

- A novel hydroxylactone from the Lewis acid catalysed pyrolysis of cellulose, 49-52
- The structure of leudrin, and the nucleophilic substitution of its primary hydroxy group by bromine, 881-4 Photosensitized oxidation of furans. Part 13. Trapping reactions of
- the carbonyl oxides obtained from some 2-methoxy-5-phenylfurans, 1699–704 Intermolecular thermal reaction of arylnitrenes with furans, 1859–
- 64

### **FÜRST-PLATTNER RULE**

Stereo- and regio-control of electrophilic additions to cyclohexene systems by neighbouring groups: participation of allylic and homoallylic ester groups in hypobromous acid addition to some 5-unsaturated cholestane derivatives, 2297-304

#### GERMACRANE

New germacrane derivatives from Nanothamnus sericeous. X-Ray molecular structure of (1R,4R,5R,6R,10R)-1,10;-4,5-diepoxy-11-hydroxygermacran-6-yl (Z)-2-methylbut-2-enoate, 657-62

#### GIBBERELLĂ FUJIKUROI

- Partial synthesis of 4-epi-trachylobagibberellin A12, 1513-6 GIBBERELLIN
  - Neighbouring group participation on the bromination of methyl gibberellate: X-ray molecular structure of methyl 3,13-di-O-acetylgibberellate:  $16\beta$ ,17-dibromide and *ent*-3 $\alpha$ , 13-diacetoxy-17bromo-10β,16β-dihydroxy-20-norgibberell-1-ene-7,19-dioic acid 19,10-lactone 7-methyl ester, 105-10
  - The stereochemistry of a rearrangement and fragmentation reaction of ring D of 13-hydroxygibberellins, 1451–4
  - The conformation of some site-specific inhibitors of the ring contraction step in gibberellin plant hormone biosynthesis, 1455-60
  - Partial synthesis of 4-epi-trachylobagibberellin A12, 1513-6
- and a synthesis of 4-ept-tracinylobagioberellin A<sub>12</sub>, 1513-6 2β-Isopropylidene-, 2β-t-butyl-, and 2β-isopropyl-gibberellin A<sub>4</sub> and spiro[gibberellin A<sub>4</sub>-2,1'-cyclopropane], 1973-82 2x-Alkyl gibberellins A<sub>1</sub> and A<sub>4</sub>, 1983-92 **GLAUCINE**
- The biosynthesis of glaucine in Litsea glutinosa, 1447-50 GLIOCLADIUM VIRENS
- New co-metabolites of gliotoxin in Gliocladium virens, 301-4 GLIOTOXIN
- New co-metabolites of gliotoxin in Gliocladium virens, 301-4 GLUCOSAMINE
  - Biosynthesis of streptothricin F. Part 6. Formation and
  - intermediacy of D-glucosamine in Streptomyces L-1689-23, 2283-

### GLUCOSIDE

Medicinal plants of southern Africa. Part 2. Synthesis of 1,3-bis-(4methoxyphenyl)penta-1,4-diene, a stereoisomer of

#### GLUCOSIDE (contd)

- dimethylhinokiresinol, and its 4-monomethoxy analogue, 1425-30 New glucoside conjugates and other cardenolide glycosides from the monarch butterfly reared on Asclepias fruticosa L., 1851-8
- **GLYCERALDEHYDE**
- Enantioselective synthesis of (3S)-trans-4-(substituted methyl)monobactams from 2,3-O-isopropylidene-Dglyceraldehyde, 649-56
- GLYCEROL
  - Heterocycles from carbohydrate precursors. Part 40. Kinetic and thermodynamic products of ketalation of 1-C-substituted L-threoglycerol: a regioselective formation of 1,3-dioxolanes, 133-8 Heterocycles from carbohydrate precursors. Part 41. Mode of
- formation of 1,3-dioxolanes and 1,3-dioxanes from 1-C substituted glycerols during their benzylidenation, 139-44
- GLYCOL
- A mild method for the conversion of 1,3-glycols into unsaturated alcohols, 2013-8 GLYCOPEPTIDE

Structure elucidation of a glycopeptide antibiotic, OA-7653, 1949-

#### **GLYCOSIDE**

- Stilbene glycosides from Guibourtia coleosperma: determination of glycosidic connectivities by homonuclear nuclear Overhauser effect difference spectroscopy, 37-42
- Identification of the absolute stereochemistry of D- and Loleandroses using a chiral h.p.l.c. column, 787-90
- Synthesis and nuclear magnetic resonance studies of some Nacylated methyl 4-amino-4,6-dideoxy-a-D-mannopyrano-sides, 1183--6
- Identification of the absolute stereochemistry of D- and L-digitoxose using a chiral high-pressure liquid chromatography column, 2621-4
- Studies on the constituents of Asclepiadaceae plants. Part 67. Further studies on glycosides with a novel sugar chain containing a pair of optically isomeric sugars, D- and L-cymarose, from Cynanchum africanum, 2625–32
- Synthesis of the C-glycoside fragment of nogalamycin and some nogalamycin precursors, 3037-46
- A convenient method for the S-glycosidic bond formation. Synthesis of p-iodophenyl 4'-thiomaltotrioside and its 2",3"-unsaturated analogue, 3345-52 GLYCOSIDIC SHIFT
- N.m.r. and conformational studies of some 1,4-linked disaccharides, 889-98
- **GLYCOSYLATION**
- Liquid liquid and solid-liquid phase-transfer glycosylation of pyrrolo[2,3-d]pyrimidines: stereospecific synthesis of 2-deoxy-β-D-ribofuranosides related to 2'-deoxy-7-carbaguanosine, 697-702 **GLYCOSYL HALIDE**
- Synthesis of thiodisaccharides using phase-transfer catalysis, 3297-300

#### **GONIOTHALAMIN**

Synthesis of the 5,6-dihydro-2-pyrone moiety of (+)-anamarin, 2291 6

GRANDISOL

A novel synthesis of cyclobutane monoterpenes  $(\pm)$ -grandisol and  $(\pm)$ -lineatin, 2433–8 GRIGNARD REACTION

Asymmetric conjugate addition to unsaturated chiral amido alcohols using Grignard reagents co-ordinated with tertiary amines or DBU. Preparation of optically active 3-substituted carboxylic acids and (S) - (-)-citronellol, 415-6

#### **GRIGNARD REAGENT**

Regioreversed nucleophilic substitution of 2-(allyloxy)benzothiazole by allylic Grignard reagents. A regioselective synthesis of 1,5dienes, 1301-4

- **GUANIDINE**
- Cyclic guanidines. Part 2. Rearrangement of N-substituted 2arylamino-4,5,6,7-tetrahydro-1H-1,3-diazepines. X-Ray molecular structure of 1-(2,6-dichlorophenyl)-2-(2-methylallylimino)-hexahydro-1,3-diazepine, 3311-6
- **GUANINĚ** 
  - Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 1. Substitutions on C-2' of the acyclic N-9 substituent, 2757-66
  - Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 2. Substitutions of C-1' and C-3' of the acyclic N-9 substituent, 2767–76

27

Analogues of the antiviral acyclonucleoside 9-(4-hydroxy-3hydroxymethylbutyl)guanine. Part 3. Modification of a 3'hydroxymethyl group, 2777-84 GUIBOURTIA COLEOSPERMA

Stilbene glycosides from Guibourtia coleosperma: determination of glycosidic connectivities by homonuclear nuclear Overhauser effect difference spectroscopy, 37-42

HALOGENATION

- Steroidal allylic and homoallylic rearrangements during halogenation with triphenylphosphine and carbon tetrachloride, 1469-72
- The chemistry of terpenes. Part 27. The halogenation of (+)-thujone and of (-)-carvotanacetone, and the stereochemistry and mechanism of formation of 'tribromothujone', 1527–36

#### HALOGENO AMIDÉ

Chemistry of 2-bromo-2-methylpropanamides. Synthesis and solvolytic behaviour of oxazolidinones and spiro-oxazolidinones, 43-8

### HANTZSCH

- A novel, base-induced fragmentation of Hantzsch-type 4-aryl-1,4dihydropyridines, 1837–44 HANTZSCH SYNTHESIS
- Formation of oxygen-bridged heterocycles in the Hantzsch synthesis with 4-(2-hydroxyphenyl)but-3-en-2-one, **2**053–8
- HELIOTRIDINE

Pyrrolizidine alkaloid analogues. Synthesis of 11-membered macrocyclic diesters of (+)-heliotridine, 1165-8

### HEMIN

- Syntheses of chlorins from unsymmetrically substituted iron porphyrins, 3119-32
- HEMIPERACETAL
  - Photosensitized oxidation of furans. Part 13. Trapping reactions of the carbonyl oxides obtained from some 2-methoxy-5-phenylfurans, 1699–704
- HEMISUCCINATE

Boar taint steroid derivatives for immunological studies. Synthesis of 11a-hydroxy-5a-androst-16-en-3-one and its hemisuccinate, 1653 - 8

- HEMOPROTEIN
  - Both-faces hindered porphyrins. Part 4. Synthesis of functionalized basket-handle porphyrins designed for a strict intramolecular axial ligation in superstructured complexes, 283-96
- HERBERTENE

A formal total synthesis of  $(\pm)$ -herbertene, 2485–90

HETEROARYLATION

The chemistry of organolead(IV) tricarboxylates. Synthesis and electrophilic heteroarylation reactions of 2- and 3-thienyl-, and 2and 3-furyl-lead tricarboxylates, 2415-22

HETEROCUMULENE

Cycloaddition of unactivated 2-aza-1,3-dienes with heterocumulenes: a convenient route to the synthesis of 1,3difunctionalized compounds, 1739-44

- HETEROCYCLOTHIAŻENE
- Organic heterocyclothiazenes. Part 7. Chemistry of 1,3,5,2,4,6-trithiatriazepines, 1745–8 HIGH PRESSURE REACTION

Synthetic studies towards the pinguisanes; synthesis of 4-epipinguisone, 471-80 HINOKIRESINOL

Medicinal plants of southern Africa. Part 2. Synthesis of 1,3-bis-(4methoxyphenyl)penta-1,4-diene, a stereoisomer of dimethylhinokiresinol, and its 4-monomethoxy analogue, 1425-

#### HISTIDINE

The synthesis and rotational isomerism of 1-amino-2-imidazol-4ylethylphosphonic acid [phosphonohistidine, His(P)] and 1amino-2-imidazol-2-ylethylphosphonic acid [phosphonoisohistidine, Isohis(P)], 61-8

HOMOCHIRAL

Homochiral fluoro-organic compounds. Microbial reduction of 1fluoro-3-(p-tolylsulphonyl)propan-2-one and of 1-fluoro-3-(p-tolylsulphonyl)propan-2-one, 2831-4

- HOMÓENOLAŤÉ
- 3,3-Diethoxypropyl-lithium: a masked lithium propanal homoenolate in organic synthesis, 3113–8 HORNER-WITTIG REACTION

Titanium as a regio- and stereo-selective control element in the

#### HORNER-WITTIG REACTION (contd)

reaction of *a*-alkoxyallylic phosphine oxide anions with carbonyl compounds, 1039-46

- Synthesis of single isomers (E or Z) of unsaturated carboxylic acids by the Horner-Wittig reaction, 1799-808
- Acyl transfer reactions with phosphine oxides: synthesis of Ehomoallylic alcohols, cyclopropyl ketones, and  $\gamma$ -hydroxy ketones, 2971-8
- **HOST-GUEST INTERACTION**

# Syntheses of macrocyclic enzyme models. Part 6. Preparation and guest-binding behaviour of octopus cyclophanes, 1289-300

HOST PLANT RESISTANCE Petuniasterones, novel ergostane-type steroids of *Petunia hybridia* Vilm. (Solanaceae) having insect-inhibitory activity. X-Ray molecular structure of the 22,24,25-[(methoxycarbonyl)orthoacetate] of  $7\alpha$ ,22,24,25-

tetrahydroxyergosta-1,4-dien-3-one and of 1a-acetoxy-24,25epoxy-7α-hydroxy-22-(methylthiocarbonyl)acetoxyergost-4-en-3-one, 711-8

#### H.P.LC.

Identification of the absolute stereochemistry of D- and Loleandroses using a chiral h.p.l.c. column, 787-90

Identification of the absolute stereochemistry of D- and L-digitoxose using a chiral high-pressure liquid chromatography column, 2621-4

#### **HYDANTOIN**

Latent inhibitors. Part 4. Irreversible inhibition of dihydro-orotate dehydrogenase by hydantoins derived from amino acids, 3175-82

### HYDRÁZOŇE

- Indolization by phosphorus trichloride of functionalized ketone arylhydrazones: synthesis of pharmacological interesting indoles, 971 4
- 2,3,7,8-Tetra-azatetracyclo[7.3.1.0<sup>4,12</sup>0<sup>6,10</sup>]tridecanes and 2,4,6,8-tetra(alkylamino)bicyclo[3.3.1]nonanes, 2501-8
- Rearrangements of aromatic carbonyl arylhydrazones of benzene, naphthalene, and azulene, 2721-8

The reactions of hydrazones and related compounds with strong bases. Part 4. 4,5-Diaryl-1,2,3-triazoles from aromatic aldehyde azines and from the reaction of arenecarbonitriles with aryldiazomethanes, 2917-20

#### HYDRAZONOYLTETRAZOLE

Reaction of benzonitrile N-(p-nitrophenyl)imide with 5-substituted tetrazoles: a new route to substituted 1,2,4-triazoles via Nhydrazonoyltetrazoles, 1587-92

### **HYDROBORONATION**

Stereochemistry of hydroboronation and osmylation of 3x,5-cycloandrost-6-en-17-one, 1465-8

### HYDROCINCHONIDINE

Total synthesis of hydrocinchonidine and hydrocinchonine via photo-oxygenation of an indole derivative, 1277-82 HYDROCINCHONINE

Total synthesis of hydrocinchonidine and hydrocinchonine via photo-oxygenation of an indole derivative, 1277-82 HYDROGEN ABSTRACTION

Synthesis and photolysis of 4-thioxoazetidin-2-ones, 1353-6 A new synthesis of  $\beta$ -lactams via photochemical  $\gamma$ -hydrogen abstraction of monothioimides, 2203-8

#### HYDROGENATION

- Reduction of 1-(2-hydroxy-3,5-di-t-butylphenyl)pyridinium halides and their zwitterions. Formation of di- and tetrahydropyrido[2,1-b]benzoxazoles, 327-32
- Efficient 1,4-asymmetric induction utilizing electrostatic interaction between ligand and substrate in the asymmetric hydrogenation of didehydrodipeptides, 1787–90
- Homogeneous hydrogenation of tetrasubstituted alkene moieties in prochiral didehydro amino acid derivatives catalysed by iridium

# complexes, 1881–4 HYDROGEN BONDING

- $\beta$ -Diketone interactions. Part 6. X-Ray molecular structure of 3-(4methoxyphenyl)pentane-2,4-dione, a β-diketone enol tautomer with a very strong hydrogen bond, 297-300
- X=Y-ZH Systems as potential 1,3-dipoles. Part 9. Aza-allyl anion precursors from the reaction of (1,3-dioxoindan-2-
- ylidene)malononitrile with a-amino acids and their methyl esters,

### **HYDROGENOLYSIS**

An efficient synthesis of ( $\pm$ )-latifine dimethyl ether, 481–4 HYDROLYSIS

Reactivity of malononitrile towards sulphamide and N-substituted

sulphamides: synthesis and hydrolysis reactions of 3,5-diamino-1,2,6-thiadiazine 1,1-dioxides, 1271–6 Enantioselectivity of the microsomal epoxide hydrolase: hydrolysis

of (±)-cis-3-bromo-1,2-epoxycyclohexane, 2715–20 HYDROPHOBIC CAGE

Syntheses of macrocyclic enzyme models. Part 6. Preparation and guest-binding behaviour of octopus cyclophanes, 1289-300 HYDROXAMIC ACID

Synthetic methods. Part 23. Rearrangement of some hydroxamic acids into amides. A self-condensation leading to disproportionation, 733–8 HYDROXY KETONE

β-Hydroxy ketones from the iodine-catalysed reaction of α-bromo ketone with aldehydes mediated by trialkylstibine, 2855-60 HYPOIODITE

Photo-induced molecular transformations. Part 87. Ring expansion through [2 + 2] photocycloaddition- $\beta$ -scission sequences; synthesis of benzohomotropones from 1- and 2-naphthols and methyl acrylate, 491-6

#### HYPOXĬS

Medicinal plants of southern Africa. Part 2. Synthesis of 1,3-bis-(4-methoxyphenyl)penta-1,4-diene, a stereoisomer of dimethylhinokiresinol, and its 4-monomethoxy analogue, 1425-

#### **IBOTENIC ACID**

Excitatory amino acids. Improved synthesis of ibotenic acid and Xray analysis of an unexpected reaction product, (RS)-N-[2-(3-benzyloxyisoxazol-5-yl)-1-phenylethyl]-3-oxobutyramide, 359-64

### ILLICIUM DUNNIANUM

New pseudoanisatin-like sesquiterpene lactones from the bark of *Illicium dunnianum*, 1537-40

**IMIDAZOLE** 

Purines, pyrimidines, and imidazoles. Part 64. Alkylation and acylation of some aminoimidazoles related to intermediates in purine nucleotide de novo and thiamine biosynthesis, 2541-6

### **IMIĎAZOTETRAZINE**

The preparation of 3-benzyl-6-(x-methylbenzyl)- and 3,6-bis(xmethylbenzyl)-s-tetrazines by alkylation of 3,6-dibenzyl-stetrazine and a study of their rearrangements to imidazo[1,2-b]s-tetrazines in alkali, 1439-46

### IMIDE

Chiroptical properties and molecular geometry of substituted succinic anhydrides and imides, 629–38

- Circular dichroism spectra and molecular geometry of six-membered ring anhydrides and imides, 639–48
- IMINE
  - Photochemistry of pyrimidin-2(1H)-ones: intermolecular hydrogen abstraction by an imino group nitrogen, 957-60
  - Cyclopalladiated aromatic imines in organic synthesis: the preparation of cinnamonitriles, cinnamates, unsymmetrical stilbenes, isoquinolones, and isoquinolines, 1317-24

### **IMINOPHOSPHORANE**

- Iminophosphorane-mediated annelation of a pyridine or pyrimidine ring into an indole ring; synthesis of  $\beta$ -,  $\gamma$ -carbolines and pyrimido[4,5-*b*]indole derivatives, 1819–22
- IMMUNOASSAY

Synthesis of conjugates of 11α-hydroxyprogesterone with β-nicotinamide adenine dinucleotide (β-NAD) and adenosine triphosphate (ATP), 2983-92

#### INDAŃ

- Total synthesis of cortisol: application to selective deuteriation at C-1 and C-19, 587-92
- INDANONE

Synthesis of 2,3-disubstituted cyclopent-2-en-1-ones from 6methoxyindanone, 1397-400 INDENE

- Synthetic studies towards the pinguisanes; synthesis of 4-epipinguisone, 471–80 INDENOINDOLE

Antifertility agents: a synthetic entry to yuehchukene analogues; stereoselective synthesis of 7,7-bis-nor-yuehchukene via 9-methyl-6-oxo-6aβ-7,8,10aβ-tetrahydroindeno[2,1-b]indole, 3317-22 INDENONE

Intramolecular ene reaction of the unsaturated acyloin 3-(but-3enyl)-2-hydroxy-3-methylcyclohexanone, 2033-6

INDOĽÉ

Polarized ketene S.S- and S,N-acetals. Part 52. Lead tetra-acetate oxidation of 3-anilino-3-methylthio-2-arylacrylonitriles. A novel approach to substituted indoles., 169-74

#### **INDOLE** (contd)

- Cycloadditions of 3H-indoles, 451-6
- Indolization by phosphorus trichloride of functionalized ketone arylhydrazones: synthesis of pharmacological interesting indoles, 971 4
- Total synthesis of hydrocinchonidine and hydrocinchonine via photo-oxygenation of an indole derivative, 1277-82
- Polymerisation of indole. Part 2. A new indole trimer, 2377 86
- Polymerisation of indole. Part 3. Two indolylquinolines, an indole tetramer, and the dihydro derivative of the indole dimer, 2387 96
- Formal synthesis of the antitumor antibiotic CC-1065, 2491-

#### 500 **INDOLE ALKALOID**

Application of a modified Pictet-Spengler reaction to the synthesis of optically active tetrahydro-β-carbolines, key intermediates in the preparation of many indole alkaloids, 39-46

#### **INDOLEQUINODIMETHANE**

Diels-Alder reactivity of pyrano[3,4-b]indol-3-ones. Part 2. Steric and electronic effects in the addition to alkynes, 1407–

#### INDOLINE

Synthesis of 1'-(3-dimethylaminopropyl)-2'-substituted

spiro[cycloalkane-1,3'-indolines], 3243-8 INDOLINETHIONE

Photoreactions of indoline-2-thiones with cyanoalkenes, 1663-

#### INDOLINONE

Synthesis of indolin-2-ones (oxindoles) related to mitomycin A, 1823 - 8

### INDOLIZINE

Radical cations. Part 2. Oxidative dimerization of indolizines: a chemical and electrochemical investigation, 3067-70

### **INDOLODITERPENE**

- Studies on fungal products. Part 17. Isolation and structures of novel indoloditerpenes, emindoles DA and DB, from Emericella desertorum: X-ray molecular structure of emindole DA acetate, 1689 - 94
- Studies on fungal products. Part 19. Isolation and structure of a novel indoloditerpene, emindole SA, from Emericella striata, 2155-60
- Isolation and structures of indoloditerpenes, possible biosynthetic intermediates to the tremorgenic mycotoxin, paxilline, from Emericella striata, 2607–10 INDOLYLQUINOLINE

Polymerisation of indole. Part 3. Two indolylquinolines, an indole tetramer, and the dihydro derivative of the indole dimer, 2387-96

#### INHIBITORS

The conformation of some site-specific inhibitors of the ring contraction step in gibberellin plant hormone biosynthesis, 1455 - 60

#### INOSITOL

The allyl group for protection in carbohydrate chemistry. Part 21.  $(\pm)$ -1,2:5,6- and  $(\pm)$ -1,2:3,4-di-O-isopropylidene-myo-inositol. The unusual behaviour of crystals of  $(\pm)$ -3,4-di-O-acetyl-1,2,5,6tetra-O-benzyl-myo-inositol on heating and cooling; a 'thermosalient solid', 981-0

#### INSECT RESISTANCE

Petuniasterones, novel ergostane-type steroids of Petunia hybridia Vilm. (Solanaceae) having insect-inhibitory activity. X-Ray molecular structure of the 22,24,25-

[(methoxycarbonyl)orthoacetate] of 7x,22,24,25-

tetrahydroxyergosta-1,4-dien-3-one and of 1<sub>a</sub>-acetoxy-24,25epoxy-7x-hydroxy-22-(methylthiocarbonyl)acetoxyergost-4-en-3-one, 711 8 INTERCALATION

Chemistry of 6H-pyrido[4,3-b]carbazoles. Part 12. Synthesis of potential bisintercalating drugs bearing two ellipticine units, 2933-44

#### INTRAMOLECULAR CARBENOID DISPLACEMENT

Synthesis of aromatic sesquiterpenes,  $(\pm)$ -cuparene and  $(\pm)$ laurene by means of an intramolecular carbenoid displacement (ICD) reaction, 193-200

#### INTRAMOLECULAR CYCLISATION

Chemistry of bis-spiroacetals. Synthesis of the 1,6,8trioxadispiro[4.1.5.3]pentadecane ring system, 125-32 β-Hydroxy ketones from the iodine-catalysed reaction of a-bromo ketone with aldehydes mediated by trialkylstibine, 2855-60

#### IODINE TRISTRIFLUOROACETATE

Synthesis of thyroid hormone analogues. Part 3. Iodonium salt approaches to SK&F L-94901, 3103-12

#### **IODOSULPHONYLATION**

Synthesis of allyl and dienyl sulphones *via* lodosulphonylation of conjugated dienes, 981-2Regio- and stereo-selective synthesis of  $\beta$ -sulphonyl- $\alpha$ , $\beta$ -unsaturated

carbonyl compounds via an iodosulphonylationdehydroiodination reaction, 1029-32

#### **IONOPHORE**

Synthesis and characterization of crowned 1,4-benzoquinones as ionophore-dienophile (redox) combined systems: double interaction with catecholamines and tryptamine, 511-20

#### **IRIDIUM CATALYSIS**

Homogeneous hydrogenation of tetrasubstituted alkene moieties in prochiral didehydro amino acid derivatives catalysed by iridium complexes, 1881–4

#### **IRIDOID LACTONE**

A total synthesis of allamcin. An approach to antileukaemic iridoid lactones and formal syntheses of plumericin and allamandin, 1119-34

#### **IRON COMPLEX**

Both-faces hindered porphyrins. Part 5. Synthesis and characterization of iron(III) basket handle porphyrins having multiple secondary amide groups inserted in the superstructures, 3285-96

#### **IRON PORPHYRIN**

Syntheses of chlorins from unsymmetrically substituted iron porphyrins, 3119–32 I.R. SPECTROSCOPY

Spectrometric and chemical studies of 5-acyl- and 5-nitroso-2-(N,Ndisubstituted amino)thiazoles, 2209-12

#### ISOAMIJIOL

Synthetic radical chemistry. Total synthesis of (±)-isoamijiol, 1085-94

#### ISOBENZIMIDAZOLE

2H-Benzimidazoles (isobenzimidazoles). Part 2. Synthesis and reactions of 5-azido-2H-benzimidazole-2-spirocyclohexane, 983

- 2H-Benzimidazoles (isobenzimidazoles). Part 3. Thermal isomerisation of substituted 2H-benzimidazoles to 1Hbenzimidazoles, 991-8
- **ISOBUTYRATE**

Butyrate metabolism in streptomycetes. Characterization of an intramolecular vicinal interchange rearrangement linking isobutyrate and butyrate in Streptomyces cinnamonensis, 3195-

# 208 ISOCYANATE

Alkylation of nitrocyanamide. A new synthesis of isocyanates, 2137-4Ò

#### **ISOEREMOLACTONE**

Enantioselective synthesis of the tricyclo[5.2.2.0<sup>1.5</sup>]undecane skeleton using aprotic Michael-additions; formal total synthesis of (+)-isoeremolactone, 373-8

ISOFLÀVONOID

Oligomeric isoflavonoids. Part 1. Structure and synthesis of the first (2,3')-isoflavone-isoflavan dimer, 1227-36

Oligomeric isoflavonoids. Part 2. Structure and synthesis of

# xanthocercin A and B, the first isoflavono-lignoids, 1237-42 ISOINDOLOBENZOTRIAZINE

Synthesis and thermal reactions of 1,2-dihydro-1,2,4-benzotriazines, 3381 - 6

#### **ISOMYTILOXANTHIN**

Carotenoids and related compounds. Part 42. Structure of isomytiloxanthin, 1389-96

#### ISONITRAMINE

Synthesis of  $(\pm)$ -nitramine and  $(\pm)$ -isonitramine, 1625 8 **ISOPROPENOID SYNTHON** 

Bakers' yeast mediated preparation of (S)-3-(2-furyl)-2-methylpropan-1-ol a bifunctional chiral C<sub>5</sub> isoprenoid synthon: synthesis of (4R,8R)-4.8-dimethyldecanal, a pheromone of

Tribolium castaneum, 3061-6 **ISOPROPYLIDENATION** 

Heterocycles from carbohydrate precursors. Part 40. Kinetic and thermodynamic products of ketalation of 1-C-substituted L-threo-

### **ISOPROPYLIDENATION** (contd)

- glycerol: a regioselective formation of 1,3-dioxolanes, 133-8 ISOŎÚINOLINĒ
- Cyclopalladiated aromatic imines in organic synthesis: the preparation of cinnamonitriles, cinnamates, unsymmetrical stilbenes, isoquinolones, and isoquinolines, 1317-24
- ISOQUINOLINÉ (contd)
- Synthesis of 6-hydroxy-1,4-dimethylisoquinoline and of ethyl 7-hydroxy-6-methoxy-1-methylisoquinoline-3-carboxylate, 1705-10

#### **ISOQUINOLONE**

- Cyclopalladiated aromatic imines in organic synthesis: the preparation of cinnamonitriles, cinnamates, unsymmetrical
- stilbenes, isoquinolones, and isoquinolines, 1317-24

### **ISOTHIOSEMICARBAZONE**

Cyclization of isothiosemicarbazones. Part 8. Formation and structure of gem-bis(3-alkylthio-1H-1,2,4-triazol-1-yl)alkanes and related compounds, 1897–904 ISOTHIOURONIUM

Reactions of some 1,3-diaminonucleophiles with azlactones, 1659-62

### ISOTOPIC LABELLING

- No-carrier-added radiobromination and radioiodination of aromatic rings using in situ generated peracetic acid, 779-86
- **ISOTOPOMER** 
  - <sup>13</sup>C Chemical shift assignments in cyclo-octene, cyclo-octanone, and cyclo-oct-2-enol from the spectra of monodeuterioisotopomers, 2287-90

#### ISOXAZOLE

- Excitatory amino acids. Improved synthesis of ibotenic acid and X-ray analysis of an unexpected reaction product, (RS)-N-[2-(3-benzyloxyisoxazol-5-yl)-1-phenylethyl]-3-oxobutyramide,
- 359-64 Reaction of isoxazoles and isoxazolium salts with organometallic
- reagents. Synthesis of dihydroisoxazoles, 791-4 Isoxazole oxazole conversion by Beckmann rearrangement, 1875
- 80

### ISOXAZOLIDINE

- Synthesis of novel carbo- and hetero-polycycles. Part 7. Synthesis of 6-azatricyclo[ $6.3.1.0^{4,10}$ ]dodecane and 5-azatricyclo[ $5.3.1.1^{3.9}$ ]dodecane derivatives *via* intramolecular cycloaddition of N-{(*endo*-bicyclo[3.3.1]non-6-en-3-yl)methyl}nitrones, 719–24
- Alkylation studies of 5-exo-methylene substituted isoxazolidines, 2639-46
- KAURENE
- Structure elucidation of longikaurin A and longikaurin B, new biologically active diterpenoids from Rabdosia longituba and chemical conversion of oridonin into dihydrolongikaurin A, 379-84
- The conformation of some site-specific inhibitors of the ring contraction step in gibberellin plant hormone biosynthesis, 1455-60
- KETENE
  - Polarized ketene S,S- and S,N-acetals. Part 52. Lead tetra-acetate oxidation of 3-anilino-3-methylthio-2-arylacrylonitriles. A novel approach to substituted indoles., 169-74 Reactions of metallated 1,3-dithianes with carboxylic acid
  - derivatives, 269-76

#### **KETENE ACETAL**

- Reactions of trimethylsilyl ketene acetals with benzoyl cyanide and with  $\alpha$ -keto esters, 411–4
- Chemistry of ketene acetals. Part 9. A simple 'one-pot' synthesis of dimethoxy-δ-lactones and 5,6-dihydro-2-pyrones from 1,1-dimethoxypropene and β-oxy aldehydes, 2315–22

#### **KETENE DITHIOACETAL**

- Synthesis of nucleosides using ketene dithioacetals, 2309-14 Polarized ketene dithioacetals. Part 65. Studies on additions of 2aroyl-3-cyano-1,1-bis(methylthio)propenide anions to heteromultiple bonds, 2365-8
- Synthesis and reactivity of lithiated  $\gamma$ -functionalised ketene dithioacetals. Generation of a flexible  $\beta$ -lithioacrylate equivalent, 3367-74 **KETO ESTER**

Reactions of trimethylsilyl ketene acetals with benzoyl cyanide and with x-keto esters, 411-4

### **KETOFURANOSIDE**

Synthesis of ketofuranosides by epoxidation-ring closure of enol ethers, 3353-8

#### **KETONE**

- Asymmetric syntheses. Part 2. Reduction of ketones with chiral sodium borohydride-lactic acid derivative systems, 417-22
- A formylation-cyclisation method of synthesis of cycloalkenones from unsaturated ketones. Part 3. Simple synthesis of some functionalised angularly fused cyclopentenone and cyclopentanone derivatives, 795-802
- α-Thio-substituted ketones as precursors of olefins *via* oxathiolanes: α-methoxybenzyl as protecting group, 813-6
- $\alpha$ -Thio-substituted ketones as precursors of olefins *via* oxathiolanes: benzyl as protecting group, 817–22
- Dienediolates from unsaturated carboxylic acids: Michael addition of dilithium buta-1,3-diene-1,1-diolate (from crotonic acid) to unsaturated ketones, 1711-8
- Nucleophilic addition to tricarbonyliron complexes of  $\alpha$ , $\beta$ unsaturated ketones and the production of 1,4-diketones, 2091-
- The mechanism of two reactions leading to isomeric 2-(N,Ndisubstituted amino)thiazol-5-yl ketones, 2213-8
- Unsaturated carboxylic acid polyenolates. Lithium trienolate of sorbic acid as a d<sup>6</sup> synthon: addition to ketones and unsaturated ketones, 2797-804

#### **KETO NUCLEOSIDE**

Preparation of 4'-amino hexopyranose nucleosides from keto nucleosides. An approach to amino nucleoside antibiotics, 1219-26

#### KUDTRIOL

Approach to the synthesis of side-chain eudesmanediols: synthesis of kudtriol from  $1-(\alpha)$ -santonin, 3149-54

LABELLING

- New co-metabolites of gliotoxin in Gliocladium virens, 301-4 Studies on the mechanism of lysine 2,3-aminomutase, 343-50
- Total synthesis of cortisol: application to selective deuteriation at C-1 and C-19, 587-92
- Biosynthesis of canescin, a metabolite of Aspergillus malignus: incorporation of methionine, acetate, succinate, and isocoumarin precursors, labelled with deuterium and carbon-13, 747-54
- An investigation of the biosynthesis of citromycetin in Penicillium frequentans using <sup>13</sup>C- and <sup>14</sup>C-labelled precursors, 755-62
- A study of biosynthesis of the polyketide polivione in *Penicillium* frequentans using <sup>13</sup>C-, <sup>2</sup>H-, and <sup>18</sup>O-labelled precursors, 769
- Biosynthesis of palitantin, a polyketide metabolite of Penicillium <sup>13</sup>C n.m.r. assignment and incorporation of <sup>13</sup>C-, brefeldianum:  $^{2}$ H-, and  $^{18}$ O<sub>2</sub>-labelled acetates, 773–8
- No-carrier-added radiobromination and radioiodination of aromatic rings using in situ generated peracetic acid, 779-86
- Synthesis of averufin and its role in aflatoxin B<sub>1</sub> biosynthesis, 839-62
- Biosynthesis of diisocyanoadociane, a novel diterpene from the marine sponge Amphimedon sp. crystal structure of a monoamide derivative, 1003-12
- Studies on the mechanism of polyketide-derived biosynthesis of deoxyradicinin and related metabolites of Alternaria helianthi, 1283-8
- The biosynthesis of glaucine in Litsea glutinosa, 1447-50

Studies in terpenoid biosynthesis. Part 35. Biosynthetic sequences leading to the diterpenoid aphidicolin in Cephalosporium aphidicola, 1477-80

- Stereochemistry of cysteinesulphinic acid decarboxylase, 1547-50
- Biosynthesis of the macrotetrolide antibiotics; the incorporation of carbon-13 and oxygen-18 labelled acetate, propionate, and succinate, 1719-28
- Syntheses of 2x- and 2\beta-deuterio-testosterones and -androst-4-ene-3.17-diones, 2027-32
- Mechanistic consideration of P-450 dependent enzymic reactions:
- Reaction of acetyl hypofluorite with pyrimidines. Part 3. Synthesis, stereochemistry, and properties of 5-fluoro-5,6-dihydropyrimidine nucleosides, 2547 54
- Biosynthesis of the macrotetrolide antibiotics; the incorporation of carbon-13 and oxygen-18 labelled acetate, propionate, and succinate, 3059-60
- Biosynthesis of the polyether antibiotic monensin-A. Results from the incorporations of labelled acetate and propionate as a probe of the carbon chain assembly processes, 3183-94

LACTAM

Retention of stereochemistry in the ring-opening of penicillin V sulphone p-nitrobenzyl ester, 183-8

#### LACTAM (contd)

- Reaction of silvlimines with ester enolates. Synthesis of Nunsubstituted azetidinones starting from nitriles, 945-8
- Synthesis of  $\gamma$ -lactam analogues of carbapenems with substituted-thio groups at the C-3 position, 2345–52 Simple and condensed  $\beta$ -lactams. Part 9. Elaboration of the 3-(1-
- hydroxyethyl) side chains of potential intermediates of carbapenem antibiotics via the 2-methyl-1,3-dioxolan-2-yl group, 1135-42
- A new synthesis of  $\beta$ -lactams via photochemical  $\gamma$ -hydrogen abstraction of monothioimides, 2203-8
- LACTATE

Asymmetric syntheses. Part 2. Reduction of ketones with chiral sodium borohydride-lactic acid derivative systems, 417-22 LACTIC ACID

Stereoselective condensation of bis-p-tolylthiomethane with lactic acid derivatives through an acylation-reduction strategy: synthesis of protected 4-deoxy-L-threose and 4-deoxy-L-erythrose, 2369-76

LACTIVICIN

Synthesis of  $\gamma$ -lactam analogues of carbapenems with substituted-thio groups at the C-3 position, 2345-52

- LACTONE
  - A novel hydroxylactone from the Lewis acid catalysed pyrolysis of cellulose, 49 52
  - Synthesis of novel macrocyclic lactones with potential pharmacological activity, 77-84
  - Synthesis of lignans related to the podophyllotoxin series, 1603-14 A short versatile synthesis of aryltetralin lignans including
  - deoxyisopodophyllotoxin and epi-isopodophyllotoxin, 1615-24 Samarium(11) di-iodide induced reductive coupling of  $\alpha,\beta$ -
  - unsaturated esters with carbonyl compounds leading to a facile synthesis of y-lactone, 1669-76 Synthesis of the 5,6-dihydro-2-pyrone moiety of (+)-anamarin,
  - 2291-6
  - Trifluoroacetoxysulphenylation of unsaturated nitriles and transformation of the adducts into lactones, 2523-32 Synthesis of the major urinary metabolite of prostaglandin  $D_2$ ,
  - 2821 6 Synthesis and reactivity of lithiated y-functionalised ketene
  - dithioacetals. Generation of a flexible  $\beta$ -lithioacrylate equivalent, 3367 74
  - Chemistry of ketene acetals. Part 9. A simple 'one-pot' synthesis of 4-hydroxy- $\delta$ -lactones and 5,6-dihydro-2-pyrones from 1,1-dimethoxypropene and  $\beta$ -oxy aldehydes, 2315–22

LACTONISATION

- Synthetic approaches to thiathromboxanes. Part 2. Synthesis of structural isomers of thiathromboxane A2, 675-80 Pyrrolizidine alkaloid analogues. Synthesis of 11-membered
- macrocyclic diesters of (+)-heliotridine, 1165-8 Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters
- of ( $\pm$ )-synthanceine A containing 12- to 16-membered rings, 1923 8
- LANOSTENONE
- The 4<sub>α</sub>-demethylation of lanostenone, 1599–602
- LATIFINE
- An efficient synthesis of  $(\pm)$ -latifine dimethyl ether, 481–4 LAURENE
- Synthesis of aromatic sesquiterpenes,  $(\pm)$ -cuparene and  $(\pm)$ laurene by means of an intramolecular carbenoid displacement (ICD) reaction, 193-200
- LAWESSON REAGENT
- Thionation reactions of diacylketene thioacetals with the Lawesson reagent and analogues, 2085-90
- LEAD
  - Lead(IV) ester and electrochemical oxidations of phenolic compounds: a comparative study, 1677-84
- The chemistry of organolead((v) tricarboxylates. Synthesis and electrophilic heteroarylation reactions of 2- and 3-thienyl-, and 2and 3-furyl-lead tricarboxylates, 2415-22
- The α-vinylation of β-dicarbonyl compounds by alk-1-enyl-lead triacetates. 2847 54 LEAD TETRA-ACETATE OXIDATION

Polarized ketene S,S- and S,N-acetals. Part 52. Lead tetra-acetate oxidation of 3-anilino-3-methylthio-2-arylacrylonitriles. A novel approach to substituted indoles., 169-74

#### LEUDRIN

The structure of leudrin, and the nucleophilic substitution of its primary hydroxy group by bromine, 881-4

- LEUROSINONE
- Leurosinone: a new binary indole alkaloid from Catharanthus roseus, 2175-8
- LIGNAN Oligomeric isoflavonoids. Part 2. Structure and synthesis of xanthocercin A and B, the first isoflavono-lignoids, 1237-42
  - Synthesis of lignans related to the podophyllotoxin series, 1603 14
- A short versatile synthesis of aryltetralin lignans including deoxyisopodophyllotoxin and epi-isopodophyllotoxin, 1615–24 Lignans and related phenols. Part 18. The synthesis of quinones from podophyllotoxin and its analogues, 2573-8
- LILIFLODIONE
- An approach to (8,3')- and  $(8,5'\cdot7,3')$ -neolignans, 2305--8 **LIMONOID**
- Synthetic studies on terpenoid compounds. Part 14. Total synthesis of pyroangolensolide, 445–50

#### LINDÉŘATIŇ

- Terpenylations using (R)-(-)- $\alpha$ -phellandrene. Synthesis of the (3S,4R)-8,9-dihydro-o- and -p-cannabidiols, their iso-THC's, and the natural dihydrochalcone (3S,4R)-(+)-linderatin, 1251–4
- LINEATIN
- A novel synthesis of cyclobutane monoterpenes ( $\pm$ )-grandisol and  $(\pm)$ -lineatin, 2433-8

#### LIPÁSÉ

Resolution of bicyclo[3.2.0]hept-2-en-6-ols and bicyclo[4.2.0]oct-2en-endo-7-ol using lipases, 3387-90

### LIPOIC ACID

- Syntheses of  $\alpha$ -(R)- and  $\alpha$ -(S)-lipoic acid from (S)-malic acid, 9-12 LITHIATED OLEFIN
- Stereoselective addition of lithium amides to activated triple bonds, 927-30
- LITHIATION
- Ring lithiation of pyridones, 1-8
- An efficient synthesis of  $(\pm)$ -latifine dimethyl ether, 481-4 3.3-Diethoxypropyl-lithium: a masked lithium propanal
- homoenolate in organic synthesis, 3113–8 Chloromethyl-lithium and 1-chloro-2-methylprop-1-enyl-lithium: useful intermediates in the synthesis of unsaturated and bifunctionalized compounds, 3339-44
- LITHIOACRYLATE

Synthesis and reactivity of lithiated  $\gamma$ -functionalised ketene dithioacetals. Generation of a flexible  $\beta$ -lithioacrylate equivalent, 3367–74 LITHIODITHIOLE

- - Preparation and properties of novel sulphur heterocycles from the reaction of 4,5-disubstituted 2-lithio-1,3-dithioles with carbon disulphide and X-ray crystallographic structure of 2-(4,5dimethyl-1,3-dithiolylidene)-5,6-dimethyl-2,3-dihydro-1,4-dithiine-3-thione, 2751-6

#### LITHIUM

- Reaction of isoxazoles and isoxazolium salts with organometallic reagents. Synthesis of dihydroisoxazoles, 791-4
- Unsaturated carboxylic acid polycnolates. Lithium trienolate of sorbic acid as a d<sup>6</sup> synthon: addition to ketones and unsaturated ketones, 2797-804
- Synthesis of thyroid hormone analogues. Part 1. Preparation of 3'heteroarylmethyl-3,5-di-iodo-L-thyronines via phenol dinitrophenol condensation and relationships between structure
- and selective thyromimetic activity, 3085-96
- LITHIUM AMIDE

Stereoselective addition of lithium amides to activated triple bonds, 927-30

- LITHIUM T-BUTYL HYDROPEROXIDE
- A stereocontrolled approach to electrophilic epoxides, 2663-74 LITSEA GLUTINOSĂ

The biosynthesis of glaucine in Litsea glutinosa, 1447 50

- LONGIKÁURIN
- Structure elucidation of longikaurin A and longikaurin B, new biologically active diterpenoids from Rabdosia longituba and chemical conversion of oridonin into dihydrolongikaurin A, 379-84 LUCIFER YELLOW VS
- The synthesis of a conjugate of progesterone with Lucifer Yellow VS: a potential probe for fluoroimmunoassay of steroids, 2979 -82

LYSINE

- Studies on the mechanism of lysine 2,3-aminomutase. 343- 50 LYSINE AMINOMUTASE
- Mechanistic studies on lysine 2,3-aminomutase: carbon-13deuterium crossover experiments, 2119-22

#### MACROCYCLE

- Macrocyclic and macropolycyclic compounds based upon 1,3disubstituted propane units, 13-22
- Synthesis of novel macrocyclic lactones with potential
- pharmacological activity, 77-84
- Pyrrolizidine alkaloid analogues. Synthesis of 11-membered macrocyclic diesters of (+)-heliotridine, 1165-8
- Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters
- Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters of (±)-synthanecine A from (±)-3-chloromethyl-2-hydroxymethyl-1-methyl-2,5-dihydropyrrolium chloride, 1169-72
   Biosynthesis of porphyrins and related macrocycles. Part 30. Synthesis of the macrocycle of the spiro system proposed as an intermediate generated by cosynthetase, 1187-202
   MACROCYCLIC DIESTER

Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters of  $(\pm)$ -synthanecine A containing 12- to 16-membered rings, 1923 - 8

### MACROHETEROCYCLE

- Macroheterocycles. Part 42. A facile synthesis of dihydroxy cryptands and their dehydroxylation, 2533-6
- MACROLIDE
- Synthesis of novel macrocyclic lactones with potential pharmacological activity, 77–84

### MACROTETROLIDE

Biosynthesis of the macrotetrolide antibiotics; the incorporation of carbon-13 and oxygen-18 labelled acetate, propionate, and succinate, 1719–28

#### MAGNESIUM

- Reaction of isoxazoles and isoxazolium salts with organometallic reagents. Synthesis of dihydroisoxazoles, 791-4
- Magnesium- and titanium-induced reductive coupling of carbonyl compounds: efficient syntheses of pinacols and alkenes, 1729-34
- $2\alpha$ -Alkyl gibberellins A<sub>1</sub> and A<sub>4</sub>, 1983–92 MALIC ACID

- Syntheses of  $\alpha$ -(R)- and  $\alpha$ -(S)-lipoic acid from (S)-malic acid, 9–12 MALONONITRILE
- Reactivity of malononitrile towards sulphamide and N-substituted sulphamides: synthesis and hydrolysis reactions of 3,5-diamino-1,2,6-thiadiazine 1,1-dioxides, 1271-6

#### MANNICH REACTION

Synthesis of  $(\pm)$ -nitramine and (+)-isonitramine, 1625-8 Synthesis of queuine, the base of naturally occurring hypermodified nucleoside (queuosine), and its analogues, 1637-44 MANNOPYRANOSIDE

Synthesis and nuclear magnetic resonance studies of some Nacylated methyl 4-amino-4,6-dideoxy-a-D-mannopyrano-sides, 1183-6

### MANUMYCIN

Studies of precursor-directed biosynthesis with Streptomyces sp. Part 1. Isolation of manumycin analogues by feeding of aminobenzoic acids as C<sub>7</sub>N starter units, 2123-8 MARASMIUS ALLIACEUS

Radical additions onto enols and enol ethers as a stratagem in synthesis. Total synthesis of the unique epoxy-lactone  $(\pm)$ -alliacolide found in *Marasmius alliaceus*, 1107–18

#### MARINE ALKALOID

Total synthesis of aaptamine of potent  $\alpha$ -blocking activity via thermal cyclization of 1-azahexatriene systems, 2429-32

### MARINE CORAL

Sclerophytins A and B. Isolation and structures of novel cytotoxic diterpenes from the marine coral *Sclerophytum capitalis*, 2537–40 MARINE METABOLITE

Total synthesis of  $(\pm)$ - $\Delta^{9(12)}$ -capnellene-8 $\beta$ ,10 $\alpha$ -diol, 1077-84 Penasterol, a novel antileukemic sterol from the Okinawan marine sponge *Penares* sp., 2403–6 MARINE SPONGE METABOLITE

Total syntheses of marine sponge metabolites. Part 3. Stereoselective total synthesis of  $(\pm)$ -12-deoxyscalaradial, 1349-52 MARKOWNIKOFF

# Reaction of olefins with Se-phenyl (selenothioperoxy)benzoate: a new anti-Markownikoff benzeneselenenylation, 575-82

#### MARKOWNIKOFF RULE

Stereo- and regio-control of electrophilic additions to cyclohexene systems by neighbouring groups: participation of allylic and homoallylic ester groups in hypobromous acid addition to some 5-unsaturated cholestane derivatives, 2297-304

#### MCMURRY REACTION

Magnesium- and titanium-induced reductive coupling of carbonyl compounds: efficient syntheses of pinacols and alkenes, 1729-34

#### **MELDRUM'S ACID**

- 3-Hydroxypyrroles and 1H-pyrrol-3(2H)-ones. Part 2. Scope and limitations of the synthesis of pyrrol-3-ones by pyrolysis of aminomethylene Meldrum's acid derivatives, 863–8
  3-Hydroxypyrroles and 1*H*-pyrrol-3(2*H*)-ones. Part 3. Pyrrolones
- from pyrolyses of aminomethylene Meldrum's acid derivatives: loss of chirality at the site of hydrogen transfer, 869–74

### MELLEDONAL

- Secondary mould metabolites. Part 19. Structure elucidation and absolute configuration of melledonals B and C, novel antibacterial sesquiterpenoids from Armillaria mellea. X-Ray molecular structure of melledonal C, 503-10
- MERCURY

The  $\alpha$ -vinylation of  $\beta$ -dicarbonyl compounds by alk-1-enyl-lead triacetates, 2847-54

#### MESIONIC

Photochemical and thermal reactions of heterocycles. Part 5. Products via transient quasiantiaromatic azetine intermediates generated by desulphurisation of photochemical intermediates from a thiazolium-4-olate and 4-aminothiazolium salts, 189–92

#### METABOLITE

- New co-metabolites of gliotoxin in *Gliocladium virens*, 301–4 Secondary mould metabolites. Part 19. Structure elucidation and absolute configuration of melledonals B and C, novel antibacterial sequitorpenoids from *Armillaria mellea*. X-Ray molecular structure of melledonal C, 503–10 Metabollites of the higher fungi. Part 23. The punctaporonins.
- Novel bi-, tri-, and tetra-cyclic sesquiterpenes related to caryophyllene, from the fungus *Poronia punctata* (Linnaeus:Fries) Fries, 823-32
- Total syntheses of marine sponge metabolites. Part 3. Stereoselective total synthesis of  $(\pm)$ -12-deoxyscalaradial, 1349–52
- Sclerophytins A and B. Isolation and structures of novel cytotoxic diterpenes from the marine coral Sclerophytum capitalis, 2537-40
- Oligomeric flavanoids. Part 2. The first profisetinidins with dihydroflavonol constituent units, 2567-72
- Synthesis of the major urinary metabolite of prostaglandin  $D_2$ , 2821-6

### **METAPHOSPHONIMIDATE**

A stereochemical study of the dissociative substitution reactions of N-(S)- $\alpha$ -phenylethyl-P-t-butylphosphonamidic chloride with t-butylamine and isopropylamine, 2737–44

- METHÁNIDE

  - Thermally induced rearrangement of thiopheniobis(alkoxycarbonyl)methanides, 803-8
  - Thermally induced rearrangement of
- thiopheniobis(alkoxycarbonyl)methanides. A theoretical MNDO SCF-MO study, 809–12 METHANOANNULENE

Synthesis and properties of methano-[12]-, -[18]-, -[20]-, -[22]-, -[24]-annulene and dimethano-[20]- and -[24]-annulene, 395-400

#### **METHANOFLUORENE**

Reactivity of phenyliodonium bis(arylsulphonyl)methylides towards alkenes and alkynes: crystal structure of 9-phenylsulphonyl-1,2,3,4,4a,9a-hexahydro-1,4-methanofluorene, 2839-46

METHIDE

Novel syntheses of naphthoquinone methide near-infrared dyes, 2439-42

#### METHYLENE

Preparation and chemical behaviour of exo-methylene compounds: isoelectronic compounds of 5-methylenecyclohexa-1,3-diene, 2579-84

### METHYLENEAMINE

Preparation of N,O-aminals as synthetic equivalents of  $H_2C=NAr$ and  $(H_2C=NHAr)^+$  ions: neutral- and acid-promoted transformations, 1631-6

#### **METHYLENECYCLOHEXADIENE**

Preparation and chemical behaviour of exo-methylene compounds: isoelectronic compounds of 5-methylenecyclohexa-1,3-diene, 2579-84

#### MICHAEL ADDITION

Enantioselective synthesis of the tricyclo[5.2.2.0<sup>1.5</sup>]undecane skeleton using aprotic Michael-additions; formal total synthesis of (+)-isoeremolactone, 373-8

X=Y-ZH Systems as potential 1,3-dipoles. Part 9. Aza-allyl anion precursors from the reaction of (1,3-dioxoindan-2 ylidene)malononitrile with a-amino acids and their methyl esters, 541-4

#### MICHAEL ADDITION (contd)

- Synthetic approaches to thiathromboxanes. Part 2. Synthesis of structural isomers of thiathromboxane A<sub>2</sub>, 675-80
- Dienediolates from unsaturated carboxylic acids: Michael addition of dilithium buta-1,3-diene-1,1-diolate (from crotonic acid) to
- unsaturated ketones, 1711-8 Reactions of 3-bromo-2,3-dihydro- and 2,3-dibromo-4*H*-1benzothiopyran-4-one 1,1-dioxides with various amines, 1829-36 Nitrogen bridgehead compounds. Part 74. Cyclization of 2-(2-
- pyridylaminomethylene)succinates in ethanolic sodium ethoxide. Part 2. Michael addition of pyridyldihydropyrrolones, 2019–22 Cyclophilic reactions of allene-1,3-dicarboxylic ester. Part 7.
- Synthesis of bicyclic and tricyclic heterocyclic compounds in-
- volving nitrogen, sulphur, and carbon as nucleophiles, 2993-3004 MICHAEL REACTION
- Stereocontrolled synthesis of the CDF part of Aconitum alkaloids via intramolecular double Michael reaction, 1155-64
- Total synthesis of  $(\pm)$ -pentalenene,  $(\pm)$ -pentalenic acid, and  $(\pm)$ deoxypentalenic acid through an intramolecular double Michael reaction, 2963-70

#### MICROBIAL REDUCTION

- Homochiral fluoro-organic compounds. Microbial reduction of 1fluoro-3-(p-tolylsulphonyl)propan-2-one and of 1-fluoro-3-(p-tolylsulphonyl)propan-2-one, 2831-4
- MILBÉMYCIN
  - Enantiospecific synthesis of the spiroacetal moieties of avermectins  $A_{1b}$ ,  $B_{1b}$ ,  $A_{1a}$ ,  $B_{1a}$ ,  $A_{2b}$ ,  $B_{2b}$ ,  $A_{2a}$ , and  $B_{2a}$  and milberrycins  $\alpha_7$ and  $\alpha_6$ , 85 98
- and  $\alpha_8, 85$ MITOMYCIN
- Synthesis of 9a-deoxymitomycin congeners, 1143-8
- Synthesis of indolin-2-ones (oxindoles) related to mitomycin A,
- 1823 8 MITOSANE
- Synthesis of 9a-deoxymitomycin congeners, 1143-8
- MITSUNOBU EPIMÉRISATION
- ynthesis of erivanin and 1-epierivanin from 1-(x)-santonin, 2633-8 MIŤSUNOBU REACTION
- Synthesis of (L)-daunosamine and related amino sugars, 111-24 MNDO
- Cyclic guanidines. Part 2. Rearrangement of N-substituted 2arylamino-4,5,6,7-tetrahydro-1H-1,3-diazepines. X-Ray molecular structure of 1-(2,6-dichlorophenyl)-2-(2methylallylimino)hexahydro-1,3-diazepine, 3311-6
- MNDO SCF MO STUDY
- Thermally induced rearrangement of
  - thiopheniobis(alkoxycarbonyl)methanides. A theoretical MNDO SCF-MO study, 809-12
- **MOLECULAR MECHANICS** 
  - Chiroptical properties and molecular geometry of substituted succinic anhydrides and imides, 629-38
- Circular dichroism spectra and molecular geometry of six-

membered ring anhydrides and imides, 639-48

#### **MOLECULAR REARRANGEMENT**

- Studies related to penicillins. Part 25. Synthesis of N-phenylacetyl and N-triphenylmethyl derivatives of 6-aminopenam 1-oxides, 2259-70
- MONENSIN
  - An efficient route to triene synthons for putative intermediates in polyether antibiotic biosynthesis, 53-60
  - Biosynthesis of the polyether antibiotic monensin-A. Results from the incorporations of labelled acetate and propionate as a probe of the carbon chain assembly processes, 3183-94
  - Butyrate metabolism in streptomycetes. Characterization of an intramolecular vicinal interchange rearrangement linking isobutyrate and butyrate in Streptomyces cinnamonensis, 3195-208

### MONOBACTAM

- Enantioselective synthesis of (3S)-trans-4-(substituted methyl)monobactams from 2,3-O-isopropylidene-Dglyceraldehyde, 649-56
- MONTMORILLONITE
- Cyclodehydration of non-aromatic diols on Al<sup>III</sup>-montmorillonite clay: reactivity and mechanism, 1749-52
- MORPHENOL
- Phenanthrene-4,5-quinones: a synthesis of morphenol, 1305-12 MORPHOLINONE
- Synthesis and reaction of optically active morpholinones, 1521-6 MULTIFUNCTIONAL CARBON STRUCTURE
  - Chemistry of novel compounds with multifunctional carbon

structure. Part 3. Synthesis of a-azido-a-fluoro-a-(phenylthio and ethylthio)acetates, 1149–54

#### MURRAYAFOLINE

- A new route to 1-oxygenated carbazoles. Synthesis of the carbazole alkaloids murrayafoline-A and murrayaquinone-A, 235-40 MURRAYAQUINÓNE
- A new route to 1-oxygenated carbazoles. Synthesis of the carbazole alkaloids murrayafoline-A and murrayaquinone-A, 235-40 Synthesis of the carbazole alkaloid murrayaquinone-B, 241-6
- MÝTILOXANTHIN
- Carotenoids and related compounds. Part 41. Structure of mytiloxanthin and synthesis of a *cis*-isomer, 1383-8 MYTILUS EDULIS
- Carotenoids and related compounds. Part 41. Structure of mytiloxanthin and synthesis of a cis-isomer, 1383-8 Carotenoids and related compounds. Part 42. Structure of
- isomytiloxanthin, 1389-96
- NANOTHAMNUS SERICEOUS
  - New germacrane derivatives from Nanothamnus sericeous. X-Ray molecular structure of (1R,4R,5R,6R,10R)-1,10;4,5-diepoxy-11hydroxygermacran-6-yl (Z)-2-methylbut-2-enoate, 657-62
- NAPHTHALENE
- Inter- and intra-molecular photocycloaddition of enol ethers to naphthalene, 31-6
- Mechanisms for reactions of halogenated compounds. Part 5. Orientating effects of fluorine substituents on nucleophilic
- substitution in naphthalene and other polycyclic systems, 251-4 Synthesis of 2,3-dialkyl-6,7-dichloro- and 2,3-dialkyl-6,7-dibromo-1,4-naphthoquinones, 559-62 Convenient syntheses of the naturally occurring benzo[b]xanthen-12-one bikaverin. X-Ray crystallographic confirmation of the product regiochemistry, 3209-16
- NAPHTHALENEDIOL

Autoxidation of naphthols: a new entry to the perylene system, 583-6

- NAPHTHALOCYANINE
- Octa-alkoxy phthalocyanine and naphthalocyanine derivatives: dyes with Q-band absorption in the far red or near infrared, 2453-8
- NAPHTHÒFURAN

Preparation, properties, and some chemical reactions of phenaleno[1,9-bc]furan, 3169-74

- NAPHTHOL
  - Autoxidation of naphthols: a new entry to the perylene system, 583-6
  - Synthesis and acetylation of naphthols as precursors to naturally derived naphthoquinones; crystal structure of the aphin-related 7-O-methyl Quinone A, 2459-68
- NAPHTHOPYRAN
- Syntheses of the aphid pigment derivatives Quinone A, Quinone A', and Deoxyquinone A as racemates, 2469-76
- NAPHTHOQUINONE
  - Studies on medicinal and related plants of Sri Lanka. Part 18. Structure of a new naphthoquinone from Plumbago zeylanica, 407 - 10
  - Synthesis of 2,3-dialkyl-6,7-dichloro- and 2,3-dialkyl-6,7-dibromo-1,4-naphthoquinones, 559-62
  - Novel syntheses of naphthoquinone methide near-infrared dyes, 2439 42
- The ansamycins: synthesis of the naphthoquinonoid nucleus of rifamycin W; crystal structure verification of a key naphthalenic intermediate, 2477-84 NEIGHBOURING GROUP

Stereo- and regio-control of electrophilic additions to cyclohexene systems by neighbouring groups: participation of allylic and homoallylic ester groups in hypobromous acid addition to some -unsaturated cholestane derivatives, 2297-304 **NEOLIGNAN** 

- An approach to (8,3')- and  $(8,5'\cdot7,3')$ -neolignans, 2305–8 **NICKEL** 

  - Reaction of α-substituted β-bromostyrenes with dicarbonyldicyanonickelate(0) anion in alkaline medium under carbon monoxide, 1993-6
- Synthesis of enantio- and diastereoiso-merically pure substituted prolines via condensation of glycine with olefins activated by a carbonyl group, 2075-84 NICKEL COMPLEX
- General method for the asymmetric synthesis of a-amino acids via alkylation of the chiral nickel(11) Schiff base complexes of glycine and alanine, 305-12

- NICOTINAMIDE ADENINE DINUCLEOTIDE
- Synthesis of conjugates of  $11\alpha$ -hydroxyprogesterone with  $\beta$ nicotinamide adenine dinucleotide ( $\beta$ -NAD) and adenosine triphosphate (ATP), 2983-92
- NICOTINIC ACID
- Benzylic azide functionalization of tautomeric o-acyl-benzoic acid, -benzamide, and -nicotinic acid derivatives, and thermal decomposition of the derived azides, 2149-54
- NITRAMINE Synthesis of  $(\pm)$ -nitramine and  $(\pm)$ -isonitramine, 1625-8
- NIŤRARIA
- Synthesis of  $(\pm)$ -nitramine and  $(\pm)$ -isonitramine, 1625–8 NITRATION
- Synthesis of 2,3-dialkyl-6,7-dichloro- and 2,3-dialkyl-6,7-dibromo-1,4-naphthoquinones, 559-62
- NITRENE
  - Intramolecular nitrene insertions into aromatic and heteroaromatic rings. Part 8. Flash vacuum pyrolysis of 2-azidobenzylpyridines, 69 - 76
  - Synthesis of novel 2,3-dihydro-8H-thieno[2,3-d]azepines and 1,2,3,4-tetrahydro-1H-3-benzazepines via photolyses of 6-azido-2,3-dihydrobenzo[b]thiophene and 6-azido-1,2,3,4tetrahydronaphthalene, 1933-8
- NITRILE
  - Reactions of metallated 1,3-dithianes with carboxylic acid derivatives, 269-76
  - Reaction of silvlimines with ester enolates. Synthesis of Nunsubstituted azetidinones starting from nitriles, 945-8
  - Allenes. Part 47. Pyrido[1,2-a]pyrimidines and their hydrolysis products from allenic and acetylenic nitriles, 975-80
  - Trifluoroacetoxysulphenylation of unsaturated nitriles and transformation of the adducts into lactones, 2523-32
  - Synthesis of (Z)-predominant  $\alpha,\beta$ -unsaturated nitriles from enone cyanohydrin diethyl phosphates: application to the synthesis of  $(\pm)$ -nuciferal,  $(\pm)$ -(E)- and -(Z)-nuciferol, and  $(\pm)$ -manicone, 3163-8

#### NITRILE IMIDE

- Reaction of benzonitrile N-(p-nitrophenyl)imide with 5-substituted tetrazoles: a new route to substituted 1,2,4-triazoles via Nhydrazonoyltetrazoles, 1587-92
- NITROAMINÉ
  - Steroidal N-nitroamines. Part 4. Intramolecular functionalization of N-nitroamine radicals: synthesis of 1,4-nitroimine compounds, 3255-66
- NITROBENZENE
- A novel, simple method for the preparation of hindered diphenyl ethers, 3229-32 NITROCYANAMIDE
- Alkylation of nitrocyanamide. A new synthesis of isocyanates, 2137-۸Ň
- NITROGEN INVERSION
- Cycloaddition of 2,3,4,5-tetrahydropyridine N-oxide to isobutyl vinyl ether and allyl alcohol; methyl 2-formylmethylpiperidine-1carboxylate, 2251-4

#### NITRO GROUP REACTION

o-Nitroaniline derivatives. Part 10. 5- and 6-Amino-1Hbenzimidazole 3-oxides, 691-6

NITROIMINE

Steroidal N-nitroamines. Part 4. Intramolecular functionalization of N-nitroamine radicals: synthesis of 1,4-nitroimine compounds, 3255-66

NITRONE

- The regiochemistry and stereochemistry of 1,3-dipolar cycloaddition of a cyclic nitrone, 597–606
- Synthesis of novel carbo- and hetero-polycycles. Part 7. Synthesis of 6-azatricyclo[6.3.1.0<sup>4,10</sup>]dodecane and 5-azatricyclo[5.3.1.1<sup>3.9</sup>]dodecane derivatives *via* intramolecular
- cycloaddition of N-{(endo-bicyclo[3.3.1]non-6-en-3-yl)methyl}nitrones, 719-24
- Cycloaddition of 2,3,4,5-tetrahydropyridine N-oxide to isobutyl vinyl ether and allyl alcohol; methyl 2-formylmethylpiperidine-1carboxylate, 2251-4
- Alkylation studies of 5-exo-methylene substituted isoxazolidines, 2639-46

NITROSATION

- Spectrometric and chemical studies of 5-acyl- and 5-nitroso-2-(N,Ndisubstituted amino)thiazoles, 2209-12 NITROXIDE
- o-Nitroaniline derivatives. Part 10. 5- and 6-Amino-1H-

- benzimidazole 3-oxides, 691-6
- o-Nitroaniline derivatives. Part 11. 4- and 7-amino-1Hbenzimidazole 3-oxides, 1939-44
- Conjugate addition with organometallics and nitration of nitroxide (aminoxyl) free radicals. Synthesis of potentially useful crosslinking spin label reagents, 2905-12
- N.M.R.
  - Stilbene glycosides from Guibourtia coleosperma: determination of glycosidic connectivities by homonuclear nuclear Overhauser effect difference spectroscopy, 37-42
  - Neighbouring group participation on the bromination of methyl gibberellate: X-ray molecular structure of methyl 3,13-di-O-acetylgibberellate 16 $\beta$ ,17-dibromide and *ent*-3 $\alpha$ , 13-diacetoxy-17bromo-10β,16β-dihydroxy-20-norgibberell-1-ene-7,19-dioic acid 19,10-lactone 7-methyl ester, 105-10
  - Reactions involving fluoride ion. Part 34. Stable perfluorinated carbanions, 201-8
  - N.m.r. and conformational studies on some 1,3-linked disaccharides, 209 - 18
  - Both-faces hindered porphyrins. Part 4. Synthesis of functionalized basket-handle porphyrins designed for a strict intramolecular axial ligation in superstructured complexes, 283-96
  - Synthesis and properties of methano-[12], -[18]-, -[20]-, -[22]-, -[24]-annulene and dimethano-[20]- and -[24]-annulene, 395-400
  - Isolation and structure elucidation of polivione, a polyketide co-metabolite of citromycetin in Penicillium frequentans, 763-8
  - Biosynthesis of palitantin, a polyketide metabolite of *Penicillium* brefeldianum: <sup>13</sup>C n.m.r. assignment and incorporation of <sup>13</sup>C-, <sup>2</sup>H-, and <sup>18</sup>O<sub>2</sub>-labelled acetates, 773–8
  - N.m.r. and conformational studies of some 1,4-linked disaccharides, 889-98
  - Compounds with bridgehead nitrogen. Part 54. The stereochemistry of some derivatives of perhydrothiazolo[3,4-a]pyridine and the synthesis of 9-methylperhydro-3,8-methano-1,3-thiazocines, 1173-
  - Synthesis and nuclear magnetic resonance studies of some Nacylated methyl 4-amino-4,6-dideoxy-x-D-mannopyrano-sides, 1183-6
  - Syntheses and reactions of 9-substituted 10-phenylthioxanthenium salts: negative evidence for thia-anthracene oligomerisation, 1209-18
  - Molecular rearrangement of 3-substituted 4-chloro-4,5-epoxide systems in ring A of steroids, 1961-72Use of the nuclear Overhauser effect in the determination of the
  - orientation of aromatic substitution in tricyclic quinoxalinones, 1997-2000
- Synthesis of (pivaloyloxy)methyl 6x-fluoropenicillanate, 2059-60
- Mechanistic studies on lysine 2,3-aminomutase: carbon-13-
- deuterium crossover experiments, 2119-22 Studies on fungal products. Part 19. Isolation and structure of a novel indoloditerpene, emindole SA, from *Emericella striata*, 2155-60
- Biosynthesis of streptothricin F. Part 6. Formation and intermediacy of D-glucosamine in Streptomyces L-1689-23, 2283-
- <sup>13</sup>C Chemical shift assignments in cyclo-octene, cyclo-octanone, and cyclo-oct-2-enol from the spectra of monodeuterioisotopomers, 2287-90
- Biosynthesis of sitosterol, cycloartenol, and 24methylenecycloartanol in tissue cultures of higher plants and of ergosterol in yeast from  $[1,2^{-13}C_2]$ - and  $[2^{-13}C^2H_3]$ -acetate and  $[5^{-13}C^2H_2]MVA$ , 2407–14
- N.m.r. spectra of porphyrins. Part 35. An examination of the proposed models of the chlorophyll a dimer, 2443-52
- N.m.r. and conformational studies of the methyl glycosides of some 1,2- and 1,3-linked disaccharides, 2729-36
- Structural elucidation of alfalfa root saponins by mass spectrometry and nuclear magnetic resonance analysis, 3071-80
- Both-faces hindered porphyrins. Part 5. Synthesis and characterization of iron(11) basket handle porphyrins having multiple secondary amide groups inserted in the superstructures, 3285-96
- Photochemistry of 2'-substituted 1,2,3,4-tetrahydronaphthalene-1spiro-3'-oxaziridines. Variable-temperature 'H nuclear magnetic resonance spectroscopy of 1-substituted 1,2,4,5-tetrahydro-2H-1benzazepin-2-ones, 3399

#### N.O.E.

- 2H-Benzimidazoles (isobenzimidazoles). Part 2. Synthesis and reactions of 5-azido-2H-benzimidazole-2-spirocyclohexane, 983-90
- Use of the nuclear Overhauser effect in the determination of the orientation of aromatic substitution in tricyclic quinoxalinones, 1997 - 2000
- NOGALAMYCIN

Synthesis of the C-glycoside fragment of nogalamycin and some nogalamycin precursors, 3037-46

- NONAČTIN
- Biosynthesis of the macrotetrolide antibiotics; the incorporation of carbon-13 and oxygen-18 labelled acetate, propionate, and succinate, 1719-28
- NONBENZENOID QUINONE
  - Synthesis and properties of cyclohepta[fg]naphth[2,3-
  - a]acenaphthylene-5,12-dione (naphth[2,3-h]acepleiadylene-5,12dione), 1541-6

NORBORNADIENE

- Valence isomer interconversion of norbornadienes and quadricyclanes having an acyl group, 2913-6
- NUCLEOPHILE
- Reactions of some 1,3-diaminonucleophiles with azlactones, 1659-

NUCLEOPHILIC ADDITION Stereoselective addition of lithium amides to activated triple bonds, 927 - 30

Nucleophilic reactions of *a*-aminoalkenenitriles, 1945-8

- Nucleophilic addition to tricarbonyliron complexes of  $\alpha,\beta$ -un-saturated ketones and the production of 1,4-diketones, 2091–4 NUCLEOPHILIC REACTION
- Reactivities of heteroaromatic cations containing a Group VIB element in nucleophilic reactions. Reactions of 9-phenylxanthylium, -thioxanthylium, and -selenoxanthylium salts with amines, sodium phenolate, and sodium benzenethiolate, 2271-6 NUCLEOPHILIC SUBSTITUTION
- Mechanisms for reactions of halogenated compounds. Part 5. Orientating effects of fluorine substituents on nucleophilic substitution in naphthalene and other polycyclic systems, 251-4
- Mechanisms for reactions of halogenated compounds. Part 6. Investigations into the activating effect of ortho-fluorine in nucleophilic aromatic substitution, 255-8
- Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters of (±)-synthanecine A from (±)-3-chloromethyl-2-hydroxymethyl-1-methyl-2,5-dihydropyrrolium chloride, 1169–72 Polyhalogenoaromatic compounds. Part 53. Substitution in
- polyfluoroaromatic compounds by bulky nucleophiles, 3301-6 NUCLÉOSIDE
- New methodology for C-nucleoside synthesis: preparation of 1,2dideoxy-1-(3-pyridyl)-D-ribofuranose, 545-8
- Use of diethylaminosulphur trifluoride (DAST) in the preparation of synthons of carbocyclic nucleosides, 549-54
- Preparation of 4'-amino hexopyranose nucleosides from keto nucleosides. An approach to amino nucleoside antibiotics, 1219-
- Synthesis of queuine, the base of naturally occurring hypermodified nucleoside (queuosine), and its analogues, 1637-44
- Nucleosides. Part 5. Isolation and characterization of the stable cyclic adducts, (5R,6S)- and (5S,6S)-bromo-O<sup>6</sup>,5'-cyclo-5,6dihydrouridines in the bromination of 2',3'-O-
- isopropylideneuridine with N-bromosuccinimide, 2227-32 Nucleosides. Part 6. New chemical modification of the ribosyl molety in uridines; synthesis of 2,2'-anhydro-1-[5-deoxy-5-(substituted thio)- $\beta$ -D-arabinofuranosyl]uracil derivatives and their conversion into 3',5'-epithiopyrimidine nucleosides, 2233-42
- Synthesis of nucleosides using ketene dithioacetals, 2309-14 Purines, pyrimidines, and imidazoles. Part 64. Alkylation and
- acylation of some aminoimidazoles related to intermediates in purine nucleotide de novo and thiamine biosynthesis, 2541-6
- Reaction of acetyl hypofluorite with pyrimidines. Part 3. Synthesis, stereochemistry, and properties of 5-fluoro-5,6-dihydropyrimidine nucleosides, 2547-54
- Stereochemical features of the anomerizations in the 5,6dihydrothymine nucleoside series, 2681-6
- Synthesis of carbocyclic nucleosides: preparation of (-)-5'-homoaristeromycin and analogues, 2927-32 Syntheses and alkaline hydrolyses of 2,2'-imino- and 2,2-
- (substituted imino)-1-(2'-deoxy-β-D-arabinofuranosyl)uracils, 2955-62

- An enantioconvergent route to carbocyclic nucleosides (-)aristeromycin and (-)-neplanocin A via the asymmetric Diels-Alder reaction, 3133-40
- **OCTANT RULE** 
  - Chiroptical properties and molecular geometry of substituted succinic anhydrides and imides, 629-38
  - Circular dichroism spectra and molecular geometry of sixmembered ring anhydrides and imides, 639-48
- OCTITOL
  - Higher-carbon sugars. Part 12. The synthesis of new octitols from D-glucose and D-mannose via the osmylation of unsaturated precursors, 3391-8
- OESTRIOL
  - Mechanistic consideration of P-450 dependent enzymic reactions: studies on oestriol biosynthesis, 2043-52
- OESTROGEN
  - Mechanistic consideration of P-450 dependent enzymic reactions: studies on oestriol biosynthesis, 2043-52
- OESTRONE
  - Mechanistic consideration of P-450 dependent enzymic reactions: studies on oestriol biosynthesis, 2043-52
- OLEANDROSE
  - Identification of the absolute stereochemistry of D- and Loleandroses using a chiral h.p.l.c. column, 787-90
- OLEFIN
- - Reaction of olefins with Se-phenyl (selenothioperoxy)benzoate: a new anti-Markownikoff benzeneselenenvlation, 575-82
  - α-Thio-substituted ketones as precursors of olefins via oxathiolanes:  $\alpha$ -methoxybenzyl as protecting group, 813–6
  - x-Thio-substituted ketones as precursors of olefins via oxathiolanes: benzyl as protecting group, 817-22
  - Chloromethyl-lithium and 1-chloro-2-methylprop-1-enyl-lithium: useful intermediates in the synthesis of unsaturated and bifunctionalized compounds, 3339-44
- OLIGOMER
  - Reactions of tetrafluoroethene oligomers. Part 7. Some reactions of 4-diazo-1,1,1,2,2-pentafluoro-3-pentafluoroethyl-3trifluoromethylbutane, 555-8
- **OLIGOMERISATION** 

  - Syntheses and reactions of 9-substituted 10-phenylthioxanthenium salts: negative evidence for thia-anthracene oligomerisation, 1209-18
- **OLIGONUCLEOTIDE**
- A new synthesis of 1-arylpiperidin-4-ols, 2881-6
- OLIGOSACCHARIDE
  - Synthesis of oligosaccharides corresponding to the antigenic determinants of the β-haemolytic *Streptococci* Group A. Part 1. Overall strategy and synthesis of a linear trisaccharide, 2103-
- **OLIVETOL**
- Acid-catalysed terpenylations of olivetol in the synthesis of cannabinoids, 1243-50
- **OPIOID AGONIST**
- Opioid agonists and antagonists. Peptides containing N-terminal allyl groups and/or a thiomethylene linkage in place of a peptide bond, 1645–52
- **OPIOID ANTAGONIST** 
  - Opioid agonists and antagonists. Peptides containing N-terminal allyl groups and/or a thiomethylene linkage in place of a peptide bond, 1645-52
- **ORGANOMETALLIC** 
  - Reaction of isoxazoles and isoxazolium salts with organometallic reagents. Synthesis of dihydroisoxazoles, 791-4
  - Nucleophilic reactions of *a*-aminoalkenenitriles, 1945-8
  - Transition-metal mediated asymmetric synthesis. Part 6. Organometallic approaches to the enantiomer synthesis of
  - tridachione: a role for planar chirality in synthesis design, 2069-

#### **OSMIUM**

- Stereochemistry of hydroboronation and osmylation of 3a,5cycloandrost-6-en-17-one, 1465-8
- OSMYLATION
- Higher-carbon sugars. Part 12. The synthesis of new octitols from D-glucose and D-mannose via the osmylation of unsaturated precursors, 3391-8

#### **OXÁDIAZABÍCYCLODECANE**

Synthetic studies on bicyclomycin and its analogues. Part 1. Synthesis of substituted 2-oxa-8,10-diazabicyclo[4.2.2]decanes, 2585-94

#### **OXADIAZABICYCLOHEPTENONE**

Studies related to penicillins. Part 26. Conversion of potassium benzylpenicillinate into 1-substituted derivatives of 3phenylacetamidoazetidine-2,4-dione, 2813-20

OXADIAZOLE

Photochemical behaviour of some 1,2,4-oxadiazole derivatives, 1313-6

### **OXATHIA-AZABICYCLONONANEDIONE**

Studies related to penicillins. Part 24. A novel thiazolidine ring enlargement of penam dioxides, 1765-72

### **OXATHIOLANE**

- α-Thio-substituted ketones as precursors of olefins via oxathiolanes: α-methoxybenzyl as protecting group, 813-6
- x-Thio-substituted ketones as precursors of olefins via oxathiolanes: benzyl as protecting group, 817-22

### OXAZINE

New routes to heterocycles via sulphenylation of unsaturated amides, 2517-22

### OXAZIRIDINE

- (+)-(3-Oxocamphorsulphonyl)oxaziridine as a highly
- stereoselective reagent for the oxidation of sulphides to chiral sulphoxides, 1753-8
- Photochemistry of 2'-substituted 1,2,3,4-tetrahydronaphthalene-1spiro-3'-oxaziridines. Variable-temperature <sup>1</sup>H nuclear magnetic resonance spectroscopy of 1-substituted 1,2,4,5-tetrahydro-2H-1benzazepin-2-ones, 3399

#### OXAZOLE

- Convenient synthesis of mixed anhydrides by the ozonolysis of oxazoles, 529-34
- Isoxazole-oxazole conversion by Beckmann rearrangement, 1875-80
- The synthesis of desertorin C, a bicoumarin from the fungus Emericella desertorum, 2425-8
- New routes to heterocycles via sulphenylation of unsaturated amides, 2517-22

### OXAZOLIDINONE

- Chemistry of 2-bromo-2-methylpropanamides. Synthesis and solvolytic behaviour of oxazolidinones and spiro-oxazolidinones, 43-8
- OXEPINE
- Synthesis, spontaneous racemization, and photoisomerization of benzo[e]pyrene 9,10-oxide, 3013-8 OXIDATION

- Polarized ketene S,S- and S,N-acetals. Part 52. Lead tetra-acetate oxidation of 3-anilino-3-methylthio-2-arylacrylonitriles. A novel approach to substituted indoles., 169-74
- Amino alcohols as C-terminal protecting groups in peptide synthesis, 535-40
- Peracid oxidation of 16-arylidene- and 16-alkylidene-17-oxosteroids, 875-80
- Lead(IV) ester and electrochemical oxidations of phenolic compounds: a comparative study, 1677-84
- Novel alkoxylations of cephalosporins by cerium(1v) salts and by electro-oxidative procedures, 1685-8
- 1,3,9,11,12,14-Hexa-azapentacene-2,4,8,10(3H,9H,12H,14H)tetraones (doubled 5-deazaflavins) with potential for oxido reduction, 1809-12
- 2,4,5,8,9,11-Hexa-azapentaphene-1,3,10,12(2H,5H,8H,11H)-tetraones (angular 5-deazapteridino-deazaflavins) with strong oxidizing power, 1813-8
- Preparation of steroidal 5β,6β-epoxides and their oxidation by chromium trioxide, 2001-4
- Epoxidation with pyridine-trifluoroacetic anhydride-molecular oxygen and its mechanistic aspects, 2335-8
- Ready oxidation of alcohols to carbonyl compounds by sodium bromite in methylene dichloride in the presence of aluminium oxide, 2423-4
- A formal total synthesis of  $(\pm)$ -herbertene, 2485–90
- Oxidations of enone systems in steroids by oxidizers with reversible redox potential, 2687–92 OXIDATIVE COUPLING

Synthesis of thyroid hormone analogues. Part 2. Oxidative coupling approach to SK&F L-94901, 3097-102

### **OXIDATIVE DEMETHYLATION**

Lignans and related phenols. Part 18. The synthesis of quinones from podophyllotoxin and its analogues, 2573–8 OXIDATIVE DESULPHINYLATION

Studies related to penicillins. Part 26. Conversion of potassium benzylpenicillinate into 1-substituted derivatives of 3-

- phenylacetamidoazetidine-2,4-dione, 2813-20 OXIDATIVE DIMERIZATION Radical cations. Part 2. Oxidative dimerization of indolizines: a chemical and electrochemical investigation, 3067-70
- **OXIDOPYRIDINIUM BETAINE**
- 1,3-Dipolar character of six-membered aromatic rings. Part 56. The cycloadditions of acetylenes and 3-oxidopyridinium betaines, 917-20

### **OXIDOSQUALENE OXIDE CYCLASE**

Stereospecific synthesis of squalenoid epoxide vinyl ethers as inhibitors of 2,3-oxidosqualene cyclase, 461-70

- OXIME
  - α-Oxyiminophosphonates: chemical and physical properties. Reactions, theoretical calculations, and X-ray crystal structures of (E)- and (Z)-dimethyl  $\alpha$ -hydroxyiminobenzylphosphonates, 3047-

#### **OXINDOLE**

Synthesis of indolin-2-ones (oxindoles) related to mitomycin A, 1823-8

#### OXIRANE

- Syntheses of  $\alpha$ -(R)- and  $\alpha$ -(S)-lipoic acid from (S)-malic acid, 9–12 **OXÓ IMIDE**
- Synthesis of stable 3,6-epidioxypyrazin-2-ones and α-oxo imides by photo-oxygenation of pyrazin-2-ones with singlet oxygen, 2921–
- **OXO SULPHONE** 
  - Spirocyclic  $\beta$ -oxo sulphoxides and sulphones as potential aldose reductase inhibitors, 3217-22

**OXO SULPHOXIDE** 

Spirocyclic β-oxo sulphoxides and sulphones as potential aldose reductase inhibitors, 3217-22

- **OZONOLYSIS**
- Convenient synthesis of mixed anhydrides by the ozonolysis of oxazoles, 529-34

#### **PAAL-KNORR REACTION**

The synthesis and chemistry of azolenines. Part 8. The Paal-Knorr reaction with cyclic 2-(acylmethyl)-2-alkyl-1,3-diketones: isolation of 1-acyl-1H-pyrroles via rearrangement, 161-8

PALITANTIN

Biosynthesis of palitantin, a polyketide metabolite of *Penicillium* brefeldianum: <sup>13</sup>C n.m.r. assignment and incorporation of <sup>13</sup>C-,  $^{2}$ H-, and  $^{18}$ O<sub>2</sub>-labelled acetates, 773–8 PALLADIUM

- - Studies on fluoroalkylation and fluoroalkoxylation, Part 28. Palladium(0)-induced addition of fluoroalkyl iodides to alkanes: an electron transfer process, 563-8
  - Organic synthesis with carbon monoxide: the synthesis of carbamoylstannanes and aromatic carbamoylation, 569-
  - Palladium(11)-catalysed rearrangements of allylic acetates in the syntheses of methyl (10E, 12Z)-9-hydroxyoctadeca-10,12-dienoate ( $\alpha$ -dimorphecolate) and (2E, 4Z)-deca-2,4-dienal, 2061-8
  - Palladium-catalysed spirocyclisation of 3-acetoxy-1-(4aminoalkyl)cyclohexenes, 2255-8
  - Synthesis of chrysenes and other *a*-fused phenanthrenes by a palladium(0) coupling-electrocyclic ring closure sequence, 2595-602
- Synthesis of aromatic steroids by palladium(0) coupling and electrocyclic ring closure, 2603–6 PAPAVERINE

The aberrant biosynthesis of 2'-nitro- and 2'-bromo-papaverines, 1929-32

### **PAPAVER SOMNIFERUM**

The aberrant biosynthesis of 2'-nitro- and 2'-bromo-papaverines, 1929 - 32

### PARATROPISM

Synthesis and properties of methano-bridged tetradehydro-[26]-, -[28]-, -[30]-, -[32]-, -[34]-, and -[38]-annulene, 385–94 PASPALINE

- Isolation and structures of indoloditerpenes, possible biosynthetic intermediates to the tremorgenic mycotoxin, paxilline, from Emericella striata, 2607-10
- PAXILLINE
- Isolation and structures of indoloditerpenes, possible biosynthetic intermediates to the tremorgenic mycotoxin, paxilline, from Emericella striata, 2607-10

PELTATIN

Lignans and related phenols. Part 18. The synthesis of quinones from podophyllotoxin and its analogues, 2573-8

#### PELTOGYNOID

Oligomeric flavanoids. Part 1. Novel dimeric profisetinidins from Colophospermum mopane, 1325-30

- PENAM
  - Synthesis of analogues of 6β-bromopenicillanic acid and penicillanic acid S,S-dioxide. Part 1. Synthesis of  $3\alpha$ -derivatives of  $6\beta$ -bromo-2,2-dimethylpenam and 2,2-dimethylpenam S,S-dioxide, 1551-6

Studies related to penicillins. Part 24. A novel thiazolidine ring enlargement of penam dioxides, 1765-72

#### PENAM OXIDE

Studies related to penicillins. Part 25. Synthesis of N-phenylacetyl and N-triphenylmethyl derivatives of 6-aminopenam 1-oxides, 2259-70

### PENASTEROL

Penasterol, a novel antileukemic sterol from the Okinawan marine sponge Penares sp., 2403-6

### PENICILLANATE

Synthesis of (pivaloyloxy)methyl 6a-fluoropenicillanate, 2059-60 Studies related to pencillins. Part 27. A strategy for the conversion of 1,1-dioxides of penicillanates into 1,1-dioxides of 3-methylceph-3-em-4-carboxylates, 3359-66

#### PENICILLANIC ÁCID

Synthesis of analogues of 6β-bromopenicillanic acid and penicillanic acid *S*,*S*-dioxide. Part 1. Synthesis of 3*x*-derivatives of 6β-bromo-2,2-dimethylpenam and 2,2-dimethylpenam *S*,*S*-dioxide, 1551–

### PENICILLIN

- Retention of stereochemistry in the ring-opening of penicillin V sulphone *p*-nitrobenzyl ester, 183-8
- Studies related to penicillins. Part 24. A novel thiazolidine ring enlargement of penam dioxides, 1765-72
- Studies related to penicillins. Part 26. Conversion of potassium benzylpenicillinate into 1-substituted derivatives of 3phenylacetamidoazetidine-2,4-dione, 2813-20

Direct incorporation of a  $6\alpha(7\alpha)$ -formamido group into penicillin and cephalosporin sulphides and sulphoxides, 2865-74

#### PENICILLIUM BREFELDIANUM

Biosynthesis of palitantin, a polyketide metabolite of *Penicillium* brefeldianum: <sup>13</sup>C n.m.r. assignment and incorporation of <sup>13</sup>C-, <sup>2</sup>H-, and <sup>18</sup>O<sub>2</sub>-labelled acetates, 773-8

### PENICILLIUM FREQUENTANS

- An investigation of the biosynthesis of citromycetin in *Penicillium* frequentans using <sup>13</sup>C- and <sup>14</sup>C-labelled precursors, 755-62 Isolation and structure elucidation of polivione, a polyketide co-
- metabolite of citromycetin in Penicillium frequentans, 763-8
- A study of biosynthesis of the polyketide polivione in *Penicillium* frequentans, 763–8 frequentans using <sup>13</sup>C-, <sup>2</sup>H-, and <sup>18</sup>O-labelled precursors, 769–72

#### PENTADIENE

Medicinal plants of southern Africa. Part 2. Synthesis of 1,3-bis-(4methoxyphenyl)penta-1,4-diene, a stereoisomer of dimethylhinokiresinol, and its 4-monomethoxy analogue, 1425-30

#### PENTALENENE

Total synthesis of  $(\pm)$ -pentalenene,  $(\pm)$ -pentalenic acid, and  $(\pm)$ deoxypentalenic acid through an intramolecular double Michael reaction, 2963-70

#### PENTALENIC ACID

Total synthesis of  $(\pm)$ -pentalenene,  $(\pm)$ -pentalenic acid, and  $(\pm)$ deoxypentalenic acid through an intramolecular double Michael reaction, 2963-70

#### PENTANEDIONE

β-Diketone interactions. Part 6. X-Ray molecular structure of 3-(4methoxyphenyl)pentane-2,4-dione, a β-diketone enol tautomer with a very strong hydrogen bond, 297-300

#### PEPTIDE

- Solid state and solution conformation of phenylacetyl-L-cysteinyl-D-penicillamine cyclic disulphide methyl ester; a cyclic dipeptide containing a *trans* amide, 365–72
- Amino alcohols as C-terminal protecting groups in peptide synthesis, 535-40
- Opioid agonists and antagonists. Peptides containing N-terminal allyl groups and/or a thiomethylene linkage in place of a peptide bond, 1645-52
- Efficient 1,4-asymmetric induction utilizing electrostatic interaction between ligand and substrate in the asymmetric hydrogenation of didehydrodipeptides, 1787-90
- Amino acids and peptides. Part 19. Synthesis of β-1- and β-2-

adamantyl aspartates and their evaluation for peptide synthesis, 2129-36

- Endoannular interactions in cysteine-containing cyclotripeptides: one-step synthesis and crystal structure of a tetracyclic aza-cyclol, 2647-52
- Peptide synthesis. Part 12. 3,4-Dihydro-4-oxo-1,2,3-benzotriazin-3yl esters of fluorenylmethoxycarbonyl amino acids as self-indicating reagents for solid phase peptide synthesis, 2887-
- Peptide synthesis. Part 13. Feedback control in solid phase synthesis. Use of fluorenylmethoxycarbonyl amino acid 3,4dihydro-4-oxo-1,2,3-benzotriazin-3-yl esters in a fully automated system, 2895-902

## PERACETIC ACID

No-carrier-added radiobromination and radioiodination of aromatic rings using *in situ* generated peracetic acid, 779–86 **PERYLENEQUINONE** 

Autoxidation of naphthols: a new entry to the perylene system, 583-6

#### PETUNIA HYBRIDA

Petuniasterones, novel ergostane-type steroids of Petunia hybridia Vilm. (Solanaceae) having insect-inhibitory activity. X-Ray molecular structure of the 22,24,25-[(methoxycarbonyl)orthoacetate] of 7a,22,24,25-

tetrahydroxyergosta-1,4-dien-3-one and of 1a-acetoxy-24,25-

epoxy- $7\alpha$ -hydroxy-22-(methylthiocarbonyl)acetoxyergost-4-en-3-one, 711-8

## PETUNIASTERONE

Petuniasterones, novel ergostane-type steroids of Petunia hybridia Vilm. (Solanaceae) having insect-inhibitory activity. X-Ray molecular structure of the 22,24,25-

- [(methoxycarbony)]orthoacetate] of  $7_{\alpha}$ ,22,24,25-tetrahydroxyergosta-1,4-dien-3-one and of  $1_{\alpha}$ -acetoxy-24,25-

epoxy-7a-hydroxy-22-(methylthiocarbonyl)acetoxyergost-4-en-3-one, 711-8 **PHASE-TRANSFER ALKYLATION** Asymmetric synthesis of L-[3-<sup>11</sup>C]alanine and L-[3-<sup>11</sup>C]phenylalanine by a phase-transfer alkylation reaction, 3081-

4

#### PHASE TRANSFER CATALYSIS

Synthesis of thiodisaccharides using phase-transfer catalysis, 3297-

#### PHASE-TRANSFER GLYCOSYLATION

Liquid-liquid and solid-liquid phase-transfer glycosylation of pyrrolo[2,3-d]pyrimidines: stereospecific synthesis of 2-deoxy-β-D-ribofuranosides related to 2'-deoxy-7-carbaguanosine, 697 702

#### PHELLANDRENE

Terpenylations using (R)-(-)- $\alpha$ -phellandrene. Synthesis of the (3S,4R)-8,9-dihydro-o- and -p-cannabidiols, their iso-THC's, and the natural dihydrochalcone (3S,4R)-(+)-linderatin, 1251–4 PHENALENOFURAN

Preparation, properties, and some chemical reactions of phenaleno[1,9-bc]furan, 3169-74

## PHENANTHRENE

Synthesis of chrysenes and other a-fused phenanthrenes by a palladium(0) coupling-electrocyclic ring closure sequence, 595-602

### PHENANTHRENEDIOL

Autoxidation of a sterically hindered phenanthrene-4,5-diol and conversion of the products into phenanthrenequinones, 1845-

## PHENANTHRENEQUINONES

Phenanthrene-4,5-quinones: a synthesis of morphenol, 1305-

### PHENANTHRIDINE

Rearrangements of aromatic carbonyl arylhydrazones of benzene, naphthalene, and azulene, 2721-8

## PHENÔL

Lead(IV) ester and electrochemical oxidations of phenolic

compounds: a comparative study, 1677-84 Selective preparation and cyclization of 2-(2-hydroxyphenyl)-2-(isopropylthio)ethanols. New synthesis of 1-benzofurans, 3029-

## PHENOL-DINITROPHENYL CONDENSATION

Synthesis of thyroid hormone analogues. Part 1. Preparation of 3'heteroarylmethyl-3,5-di-iodo-L-thyronines via phenoldinitrophenol condensation and relationships between structure and selective thyromimetic activity, 3085-96

### PHENOL OXIDATIVE COUPLING

Oligomeric isoflavonoids. Part 2. Structure and synthesis of xanthocercin A and B, the first isoflavono-lignoids, 1237-42 PHENOXIDE

A novel, simple method for the preparation of hindered diphenyl ethers, 3229-

PHENYLIODONIUM BIS(ARYLSULPHONYL)METHYLIDE Reactivity of phenyliodonium bis(arylsulphonyl)methylides towards alkenes and alkynes: crystal structure of 9-phenylsulphonyl-1,2,3,4,4a,9a-hexahydro-1,4-methanofluorene, 2839-46

#### PHENYLNITRENIUM ION

Reaction of phenylnitrenium ion with sulphides. A novel synthetic method for aminophenyl sulphide derivatives, 521-8

Thermolysis and photolysis of 1-anilino-2-methyl-4,6diphenylpyridinium tetrafluoroborate in arene-trifluoroacetic acid mixtures: a novel route to singlet and triplet phenylnitrenium ions, 2277-82

#### PHEROMONE

- A novel synthesis of cyclobutane monoterpenes  $(\pm)$ -grandisol and  $(\pm)$ -lineatin, 2433–8
- Bakers' yeast mediated preparation of (S)-3-(2-furyl)-2methylpropan-1-ol, a bifunctional chiral  $C_5$  isoprenoid synthesis synthesis of (4R,8R)-4,8-dimethyldecanal, a pheromone of ribolium castaneum, 3061-6

#### **PHLOBOTANNIN**

- Oligomeric flavanoids. Part 3. Structure and synthesis of phlobatannins related to (-)-fisetinidol- $(4\alpha,6)$  and  $(4\alpha,8)$ -(+)-catechin profisetinidins, 3323–30
- Oligomeric flavanoids. Part 4. Base-catalysed conversions of (-)fisetinidol-(+)-catechin profisetinidins with 2,3-trans-3,4-cisflavan-3-ol constituent units, 3331-8

## PHOSPHATE

Chemistry of bacterial endotoxins. Part 4. Synthesis of anomeric 2-deoxy-2-[(3R)-3-hydroxytetradecanamido]-D-glucopyranosyl phosphate and pyrophosphate derivatives related to 'Lipid A', 2243-50

Synthesis of (Z)-predominant  $\alpha,\beta$ -unsaturated nitriles from enone cyanohydrin diethyl phosphates: application to the synthesis of  $(\pm)$ -nuciferal,  $(\pm)$ -(*E*)- and -(*Z*)-nuciferol, and  $(\pm)$ -manicone, 3163-8

#### PHOSPHAZENE

Reactivity and chemoselectivity of primary Z- $\beta$ -enamino- $\lambda^5$ phosphazenes towards electrophiles, 2329-34

### PHOSPHINE

- Retrodienic reactions. Part 2. Vinyl- and propenyl-phosphines: synthesis by flash vacuum thermolysis and characterization, 99-104
- Acyl transfer reactions with phosphine oxides: synthesis of Ehomoallylic alcohols, cyclopropyl ketones, and  $\gamma$ -hydroxy

# ketones, 2971–8 PHOSPHINE OXIDE

- Stereospecific synthesis of squalenoid epoxide vinyl ethers as inhibitors of 2,3-oxidosqualene cyclase, 461-70
- Titanium as a regio- and stereo-selective control element in the reaction of *x*-alkoxyallylic phosphine oxide anions with carbonyl compounds, 1039-46
- Synthesis of single isomers (E or Z) of unsaturated carboxylic acids by the Horner-Wittig reaction, 1799–808

### PHOŚPHITE

- Oxo-phospholes from the alkoxyphosphonium ylides formed in the reaction of trialkyl phosphites or dialkyl phosphonites with dimethyl acetylenedicarboxylate, 175–8
- Reaction of oxophosphorane-sulphenyl and -selenenyl chlorides with dialkyl trimethylsilyl phosphites. Novel synthesis of compounds containing a sulphur or selenium bridge between two phosphoryl centres, 2197–202

#### PHOSPHOCHOLINE

Synthesis and spectral properties of chemically and stereochemically homogeneous sphingomyelin and its analogues Karol S. Bruzik, 423\_3

### PHOSPHOLE

- Oxo-phospholes from the alkoxyphosphonium ylides formed in the reaction of trialkyl phosphites or dialkyl phosphonites with dimethyl acetylenedicarboxylate, 175-8
- The reaction of alkyl-substituted thioanisoles with  $PCl_3$  and  $AlCl_3$ : a route to [1,2,3]benzothiadiphospholo[2,3-*b*]

# [1,2,3]benzothiadiphosphole derivatives, 3281–4 PHOSPHONAMIDIC CHLORIDE

A stereochemical study of the dissociative substitution reactions of

N-(S)- $\alpha$ -phenylethyl-P-t-butylphosphonamidic chloride with tbutylamine and isopropylamine, 2737-44

### PHOSPHONATE

α-Oxyiminophosphonates: chemical and physical properties. Reactions, theoretical calculations, and X-ray crystal structures of (E)- and (Z)-dimethyl  $\alpha$ -hydroxyiminobenzylphosphonates, 3047-

## PHOSPHONIC ACID

The synthesis and rotational isomerism of 1-amino-2-imidazol-4ylethylphosphonic acid [phosphonohistidine, His(P)] and 1amino-2-imidazol-2-ylethylphosphonic acid [phosphonoisohistidine, Isohis(P)], 61-8

#### PHOSPHONITE

Oxo-phospholes from the alkoxyphosphonium ylides formed in the reaction of trialkyl phosphites or dialkyl phosphonites with dimethyl acetylenedicarboxylate, 175-8

#### PHOSPHONOHÍSTIDINE

The synthesis and rotational isomerism of 1-amino-2-imidazol-4ylethylphosphonic acid [phosphonohistidine, His(P)] and 1-amino-2-imidazol-2-ylethylphosphonic acid phosphonoisohistidine, Isohis(P)], 61-8

## PHOSPHORANE

Reaction of oxophosphorane-sulphenyl and -selenenyl chlorides with dialkyl trimethylsilyl phosphites. Novel synthesis of compounds containing a sulphur or selenium bridge between two phosphoryl centres, 2197-202 PHOSPHORYLATED SUGAR

Phosphorylated sugars. Part 24. Methyl 3-deoxy-a-D-manno-oct-2-ulopyranosidonic acid 4-(dihydrogen phosphate): synthesis, stability in acidic medium, and colorimetric estimation, 707-10

## PHOTOADDITION

Photochemistry of N-heterocycles. Part 1. Synthesis and photochemistry of some 2(4),5-dihydro-1,2,4-triazines. X-Ray molecular structure of 1-(4-methyl-3,5,6-triphenyl-1,4,5,6tetrahydro-1,2,4-triazin-6-yl)ethanol, 3267-74

#### PHOTOCHEMISTRY

Photochemical and thermal reactions of heterocycles. Part 5. Products via transient quasiantiaromatic azetine intermediates generated by desulphurisation of photochemical intermediates from a thiazolium-4-olate and 4-aminothiazolium salts, 189-92

Photo-induced molecular transformations. Part 87. Regiospecific photo-Beckmann rearrangement of steroidal a, \beta-unsaturated ketone oximes: synthesis of some steroidal enamino lactams, 321-

Photochemistry of pyrimidin-2(1H)-ones: intermolecular hydrogen abstraction by an imino group nitrogen, 957-60

- Photochemical behaviour of some 1,2,4-oxadiazole derivatives, 1313-6
- Synthesis and photolysis of 4-thioxoazetidin-2-ones, 1353-6
- Synthetic studies relevant to biosynthetic research on vitamin B Part 6. Synthesis of chlorins by a photochemical approach,  $15\overline{57}$ -
- Synthetic studies relevant to biosynthetic research on vitamin B<sub>12</sub>. Part 7. Synthesis of  $(\pm)$ -bonellin dimethyl ester, 1569–76
- Photochemistry of 5-methylpyrimidin-4-ones in acetic acid solution: thermal rearrangements of Dewar pyrimidinones and 4-acetoxyazetidin-2-ones, 2653–62

#### **PHOTOCÝCLISATION**

Synthetic studies relevant to biosynthetic research on vitamin  $B_{12}$ . Part 8. Synthesis of  $(\pm)$ -Faktor-I octamethyl ester, 1577-86

Photocyclisation of enamides. Part 27. Total syntheses of  $(\pm)$ yohimbine  $(\pm)$ -alloyohimbine, and  $(\pm)$ -19,20-

# didehydroyohimbines, 2219–26 PHOTOCYCLIZATION

Synthesis of condensed polycyclic azonia aromatic compounds by photocyclization, 415-4 PHOTOCYCLOADDITION

Inter- and intra-molecular photocycloaddition of enol ethers to naphthalene, 31-6

- Photo-induced molecular transformations. Part 87. Ring expansion through [2 + 2] photocycloaddition- $\beta$ -scission sequences synthesis of benzohomotropones from 1- and 2-naphthols and methyl acrylate, 491-6
- Photoreactions of indoline-2-thiones with cyanoalkenes, 1663-8 Synthesis and photochemistry of 3,6-difluoro-10,11-benzopentacyclo[6,4,0.0<sup>2,7</sup>,0<sup>3,12</sup>.0<sup>6,9</sup>]dodeca-4,10-diene,
- 3307-10

#### PHOTODEBROMINATION

- Nucleosides. Part 5. Isolation and characterization of the stable cyclic adducts, (5R,6S)- and (5S,6S)-bromo-O<sup>6</sup>,5'-cyclo-5,6dihydrouridines in the bromination of 2',3'-Oisopropylideneuridine with N-bromosuccinimide, 2227-32
- PHOTODECHLORINATION
  - Borohydride-enhanced dechlorination of chlorobenzenes and toluenes, 703-6

### PHOTODEHYDROGENATION

Photochemistry of N-heterocycles. Part 1. Synthesis and photochemistry of some 2(4),5-dihydro-1,2,4-triazines. X-Ray molecular structure of 1-(4-methyl-3,5,6-triphenyl-1,4,5,6tetrahydro-1,2,4-triazin-6-yl)ethanol, 3267-74

#### **PHOTOIRRADIATION**

Photoresponsive crown ethers. Part 20. Reversible photocontrol of association-dissociation equilibria between azobis(benzo-18crown-6) and diammonium cations, 1431-8

#### **PHOTOISOMERISATION**

Photoresponsive crown ethers. Part 20. Reversible photocontrol of association-dissociation equilibria between azobis(benzo-18crown-6) and diammonium cations, 1431-8

## **PHOTOISOMERIZATION**

Synthesis, spontaneous racemization, and photoisomerization of benzo[e]pyrene 9,10-oxide, 3013-8 PHOTOLYSIS

- 2H-Benzimidazoles (isobenzimidazoles). Part 2. Synthesis and reactions of 5-azido-2H-benzimidazole-2-spirocyclohexane, 983
- Synthesis of novel 2,3-dihydro-8H-thieno[2,3-d]azepines and 1,2,3,4-tetrahydro-1H-3-benzazepines via photolyses of 6-azido-2,3-dihydrobenzo[b]thiophene and 6-azido-1,2,3,4tetrahydronaphthalene, 1933-8
- A new synthesis of  $\beta$ -lactams via photochemical  $\gamma$ -hydrogen abstraction of monothioimides, 2203-8
- Thermolysis and photolysis of 1-anilino-2-methyl-4,6diphenylpyridinium tetrafluoroborate in arene-trifluoroacetic acid mixtures: a novel route to singlet and triplet phenylnitrenium ions, 2277-82
- Preparation and chemical behaviour of exo-methylene compounds: isoelectronic compounds of 5-methylenecyclohexa-1,3-diene, 2579-84
- Steroidal N-nitroamines. Part 4. Intramolecular functionalization of N-nitroamine radicals: synthesis of 1,4-nitroimine compounds, 3255-66

## PHOTO-OXIDATION

- [2',2']-(+)-Catechin-(+)-taxifolin from commercial willow
- bark: structure, bonding positions and oxidative cleavage, 219-

### **PHOTO-OXYGENATION**

- Total synthesis of hydrocinchonidine and hydrocinchonine via photo-oxygenation of an indole derivative, 1277-82
- Synthesis of stable 3,6-epidioxypyrazin-2-ones and x-oxo imides by photo-oxygenation of pyrazin-2-ones with singlet oxygen, 2921-6

### PHOTOREARRANGEMENT

Photochemistry of 2'-substituted 1,2,3,4-tetrahydronaphthalene-1spiro-3'-oxaziridines. Variable-temperature <sup>1</sup>H nuclear magnetic resonance spectroscopy of 1-substituted 1,2,4,5-tetrahydro-2*H*-1-benzazepin-2-ones, 3399

## PHOTORESPONSE

Photoresponsive crown ethers. Part 20. Reversible photocontrol of association-dissociation equilibria between azobis(benzo-18crown-6) and diammonium cations, 1431-8

## PHOTOSENSITIZED OXIDATION

Photosensitized oxidation of furans. Part 13. Trapping reactions of the carbonyl oxides obtained from some 2-methoxy-5phenylfurans, 1699-704

#### PHTHALIDE

An efficient synthesis of  $(\pm)$ -latifine dimethyl ether, 481–4 Synthesis of the C-glycoside fragment of nogalamycin and some nogalamycin precursors, 3037–46 PHTHALOCYANINE

Octa-alkoxy phthalocyanine and naphthalocyanine derivatives: dyes with Q-band absorption in the far red or near infrared, 2453-8 PHYTOSTEROL

Biosynthesis of sitosterol, cycloartenol, and 24-

methylenecycloartanol in tissue cultures of higher plants and of ergosterol in yeast from  $[1,2^{-13}C_2]$ - and  $[2^{-13}C^2H_3]$ -acetate and  $[5^{-13}C^2H_2]MVA$ , 2407–14

#### PICTET-SPENGLER

Application of a modified Pictet-Spengler reaction to the synthesis of optically active tetrahydro-β-carbolines, key intermediates in the preparation of many indole alkaloids, 739-46

### PINACÓLÍZATION

Magnesium- and titanium-induced reductive coupling of carbonyl compounds: efficient syntheses of pinacols and alkenes, 1729-

#### PINGUISANE

Synthetic studies towards the pinguisanes; synthesis of 4-epipinguisone, 471–80

## PIPÉRĂZINE

Synthetic studies on bicyclomycin and its analogues. Part 1. Synthesis of substituted 2-oxa-8,10-diazabicyclo[4.2.2]decanes, 2585–94

#### PIPERIDINE

Cycloaddition of 2,3,4,5-tetrahydropyridine N-oxide to isobutyl vinyl ether and allyl alcohol; methyl 2-formylmethylpiperidine-1carboxylate, 2251-4

## PIPE .'DINOL

A rew synthesis of 1-arylpiperidin-4-ols, 2881-6

## **PIPERIDÍNONE**

- A new synthesis of 1-arylpiperidin-4-ols, 2881-6 PISIFERIC ACID
  - Total synthesis of  $(\pm)$ -pisiferic acid, 931-8

#### PLUMBAGIN

Studies on medicinal and related plants of Sri Lanka. Part 18. Structure of a new naphthoquinone from Plumbago zeylanica, 407 - 10

#### PLUMBAGO ZEYLANICA

Studies on medicinal and related plants of Sri Lanka. Part 18. Structule of a new naphthoquinone from Plumbago zeylanica, 407-10

#### PLUMERICIN

A total synthesis of allamcin. An approach to antileukaemic iridoid lactones and formal syntheses of plumericin and allamandin, 1119 - 34

#### PODOPHYLLOTOXIN

- Synthesis of lignans related to the podophyllotoxin series, 1603-14
- A short versatile synthesis of aryltetralin lignans including
- deoxyisopodophyllotoxin and epi-isopodophyllotoxin, 1615–24 Lignans and related phenols. Part 18. The synthesis of quinones
- from podophyllotoxin and its analogues, 2573-8 POLAR EFFECT

Regioselective formation of amidocarboxy-substituted free radicals, 265 - 8

### POLIVIONE

- Isolation and structure elucidation of polivione, a polyketide cometabolite of citromycetin in Penicillium frequentans, 763-8
- A study of biosynthesis of the polyketide polivione in *Penicillium* frequentans using <sup>13</sup>C-, <sup>2</sup>H-, and <sup>18</sup>O-labelled precursors, 769-

### POLYAMINE

Selective protection of polyamines: synthesis of model compounds and spermidine derivatives, 1905–12

#### POLYENE

- Carotenoids and related compounds. Part 40. Synthesis of trikentriorhodin and other  $\beta$ -diketones, 1371–82 Carotenoids and related compounds. Part 41. Structure of
- mytiloxanthin and synthesis of a *cis*-isomer, 1383-8 POLYETHER

- An efficient route to triene synthons for putative intermediates in polyether antibiotic biosynthesis, 53-60
- Biosynthesis of the polyether antibiotic monensin-A. Results from the incorporations of labelled acetate and propionate as a probe of the carbon chain assembly processes, 3183-94

#### POLYKETIDE

- Isolation and structure elucidation of polivione, a polyketide co-metabolite of citromycetin in Penicillium frequentans, 763-
- A study of biosynthesis of the polyketide polivione in *Penicillium frequentans* using <sup>13</sup>C-, <sup>2</sup>H-, and <sup>18</sup>O-labelled precursors, 769-
- Biosynthesis of palitantin, a polyketide metabolite of Penicillium brefeldianum: <sup>13</sup>C n.m.r. assignment and incorporation of <sup>13</sup>C-, <sup>2</sup>H-, and <sup>18</sup>O<sub>2</sub>-labelled acetates, 773-8
- Thermorubin biosynthesis: evidence for the involvement of both salicylic acid and an undecaketide, 1865-8

#### POLYMERISATION

Polymerisation of indole. Part 2. A new indole trimer, 2377-86 Polymerisation of indole. Part 3. Two indolylquinolines, an indole tetramer, and the dihydro derivative of the indole dimer, 2387-96

#### POLYMERIZATION

Initiation mechanisms in radical polymerization: reaction of t-butoxy radicals with allyl acrylate and with diallyl ether, 485-90

- PORONIA PUNCTATA
  - Metabollites of the higher fungi. Part 23. The punctaporonins. Novel bi-, tri-, and tetra-cyclic sequiterpenes related to caryophyllene, from the fungus *Poronia punctata* (Linnaeus:Fries) Fries. 823-32

#### PORPHYRIN

Both-faces hindered porphyrins. Part 4. Synthesis of functionalized basket-handle porphyrins designed for a strict intramolecular axial ligation in superstructured complexes, 283-96

Biosynthesis of porphyrins and related macrocycles. Part 30. Synthesis of the macrocycle of the spiro system proposed as an intermediate generated by cosynthetase, 1187-202

meso-Reactivity of porphyrins and related compounds. Part 10. Direct fluorination of octaethylporphyrin with caesium fluoroxysulphate, 1735-8

N.m.r. spectra of porphyrins. Part 35. An examination of the proposed models of the chlorophyll a dimer, 2443-52

Syntheses of chlorins from unsymmetrically substituted iron porphyrins, 3119-32

Both-faces hindered porphyrins. Part 5. Synthesis and characterization of iron(111) basket handle porphyrins having multiple secondary amide groups inserted in the superstructures, 3285-96

## PPP-MO

Triphenylmethane dye ethynologues with absorption bands in the near infrared, 3155–62 PREMONENSIN

An efficient route to triene synthons for putative intermediates in polyether antibiotic biosynthesis, 53-60

#### PROFIŠETINIDIN

- Oligomeric flavanoids. Part 1. Novel dimeric profisetinidins from *Colophospermum mopane*, 1325–30 Oligomeric flavanoids. Part 2. The first profisetinidins with
- dihydroflavonol constituent units, 2567-72
- Oligometric flavanoids. Part 3. Structure and synthesis of phlobatannins related to (-)-fisetinidol- $(4\alpha,6)$  and  $(4\alpha,8)$ -(+)-catechin profisetinidins, 3323–30
- Oligomeric flavanoids. Part 4. Base-catalysed conversions of (-)fisetinidol-(+)-catechin profisetinidins with 2,3-trans-3,4-cisflavan-3-ol constituent units, 3331-8

### PROGESTERONE

- The synthesis of a conjugate of progesterone with Lucifer Yellow VS: a potential probe for fluoroimmunoassay of steroids, 2979-82
- Synthesis of conjugates of  $11\alpha$ -hydroxyprogesterone with  $\beta$ -nicotinamide adenine dinucleotide ( $\beta$ -NAD) and adenosine triphosphate (ATP), 2983-92

### PROLÍNE

Synthesis of enantio- and diastereoiso-merically pure substituted prolines via condensation of glycine with olefins activated by a carbonyl group, 2075–84 PROPANAL HOMOENOLATE

- 3,3-Diethoxypropyl-lithium: a masked lithium propanal
- homoenolate in organic synthesis, 3113-8

## PROPANONE

Homochiral fluoro-organic compounds. Microbial reduction of 1fluoro-3-(p-tolylsulphonyl)propan-2-one and of 1-fluoro-3-(ptolylsulphenyl)propan-2-one, 2831-4

#### **PROPÉNIDE ANION**

Polarized ketene dithioacetals. Part 65. Studies on additions of 2aroyl-3-cyano-1,1-bis(methylthio)propenide anions to heteromultiple bonds, 2365-8

#### PROSTAGLANDIN

Synthesis of the major urinary metabolite of prostaglandin D<sub>2</sub>, 2821-6

### PROTEACEAE

The structure of leudrin, and the nucleophilic substitution of its primary hydroxy group by bromine, 881-4 PROTECTING GROUP

 $\alpha$ -Thio-substituted ketones as precursors of olefins via oxathiolanes:

α-methoxybenzyl as protecting group, 813-6

- α-Thio-substituted ketones as precursors of olefins via oxathiolanes: benzyl as protecting group, 817–22 PSEUDOANISATIN
- New pseudoanisatin-like sesquiterpene lactones from the bark of Illicium dunnianum, 1537-40

## **PSEUDO SUGAR**

Synthetic studies on antibiotic validamycins. Part 12. Total synthesis of (+)-validamycin B and (+)-validoxylamine B, 2675-80

PUNCTAPORONIN

Metabollites of the higher fungi. Part 23. The punctaporonins. Novel bi-, tri-, and tetra-cyclic sesquiterpenes related to caryophyllene, from the fungus Poronia punctata (Linnaeus:Fries) Fries, 823-32

- PURINE
- o-Nitroaniline derivatives. Part 10. 5- and 6-Amino-1Hbenzimidazole 3-oxides, 691-6
- Purines, pyrimidines, and imidazoles. Part 64. Alkylation and acylation of some aminoimidazoles related to intermediates in purine nucleotide de novo and thiamine biosynthesis, 2541-6 PYRAN
  - A synthesis of (2S,6S)-2-hydroxymethyl-6-methoxytetrahydropyran; a useful chiral intermediate, 999-1002
- **PYRANOCHROMENE** 
  - Oligomeric flavanoids. Part 3. Structure and synthesis of phlobatannins related to ( – )-fisetinidol-( $4\alpha$ ,6)- and ( $4\alpha$ ,8)-( + )-catechin profisetinidins, 3323–30
- Oligomeric flavanoids. Part 4. Base-catalysed conversions of (-)fisetinidol-(+)-catechin profisetinidins with 2,3-trans-3,4-cisflavan-3-ol constituent units, 3331-8 PYRANOINDOLE

- Diels-Alder reactivity of pyrano[3,4-b]indol-3-ones. Part 3. Intramolecular Diels-Alder reactions, 3249-54
- PYRANOINDOLONE
- Diels-Alder reactivity of pyrano[3,4-b]indol-3-ones. Part 2. Steric and electronic effects in the addition to alkynes, 1407-16

PYRAZINONE

Synthesis of stable 3,6-epidioxypyrazin-2-ones and a-oxo imides by photo-oxygenation of pyrazin-2-ones with singlet oxygen, 2921-6

#### **PYRAZOLE**

- Benzopyrans. Part 23. Nitrogen heterocycles fused with or linked to 1-benzopyran from 3-acyl-2-methyl-1-benzopyran-4-one, 1489-94
- Synthesis of nucleosides using ketene dithioacetals, 2309–14 **PYRIDAZINE** 
  - Pyridazine chemistry. Part 33. 5-Aminopyridazin-4-yl ofluorophenyl ketone as a key intermediate in the syntheses of diaza analogues of acridone, xanthone, and thioxanthone, 401-6 Trifluoromethanethiolate ion. Part 3. Reactions with
- tetrafluoropyridazine and tetrafluoropyrimidine, 1179-82

## **PYRIDAZINOQUINOLINE**

Pyridazine chemistry. Part 33. 5-Aminopyridazin-4-yl ofluorophenyl ketone as a key intermediate in the syntheses of diaza analogues of acridone, xanthone, and thioxanthone, 401-6 PYRIDINE

- Contrasting reactions of 2,6-dichloro-4-trichloromethylpyridine, 2,6dichloro-3-trichloromethylpyridine and their N-oxides with nucleophiles, 227-34
- Mechanisms for reactions of halogenated compounds. Part 6. Investigations into the activating effect of ortho-fluorine in nucleophilic aromatic substitution, 255-8
- The regiochemistry and stereochemistry of 1,3-dipolar cycloaddition of a cyclic nitrone, 597-606
- Role of remote heteroatoms and nature of the reducing agents on the stereochemical course of reductions of the carbon-nitrogen  $\pi$ -bond of a new class of tetrahydropyridines, 611–22
- A novel, base-induced fragmentation of Hantzsch-type 4-aryl-1,4dihydropyridines, 1837-44
- Synthesis of 2-substituted 4-pyridylpropionates. Part 1. Claisen condensation approach, 2785–90

Synthesis of 2-substituted 4-pyridylpropionates. Part 2. Alkylation approach, 2791-6

#### **PYRIDINIUM SALT**

Thermolysis and photolysis of 1-anilino-2-methyl-4,6diphenylpyridinium tetrafluoroborate in arene-trifluoroacetic acid mixtures: a novel route to singlet and triplet phenylnitrenium ions, 2277-82

#### **PYRIDOBENZOXAZOLE**

- Reduction of 1-(2-hydroxy-3,5-di-t-butylphenyl)pyridinium halides and their zwitterions. Formation of di- and tetrahydropyrido[2,1-*b*]benzoxazoles, 327–32 **PYRIDOCARBAZOLE**
- Chemistry of 6H-pyrido[4,3-b]carbazoles. Part 12. Synthesis of potential bisintercalating drugs bearing two ellipticine units, 2933 - 44
- Chemistry of 6H-pyrido[4,3-b]carbazoles. Part 13. Syntheses of ring-A- and ring-D-substituted ellipticines, 2945-54
- PYRIDONE

Ring lithiation of pyridones, 1–8 **PYRIDOPYRIMIDINE** 

- Studies of pyrimidine-2,4-diones: synthesis of novel condensed pyrido[2,3-d]pyrimidines via intramolecular cycloadditions, 607-
- Allenes. Part 47. Pyrido[1,2-a]pyrimidines and their hydrolysis products from allenic and acetylenic nitriles, 975-80
- Nitrogen bridgehead compounds. Part 74. Cyclization of 2-(2pyridylaminomethylene)succinates in ethanolic sodium ethoxide. Part 2. Michael addition of pyridyldihydropyrrolones, 2019–22

#### **PYRIDOQUINOXALINONE**

Use of the nuclear Overhauser effect in the determination of the orientation of aromatic substitution in tricyclic quinoxalinones, 1997–2000 PYRIDOXAL DECARBOXYLASE

X=Y-ZH systems as potential 1,3-dipoles. Part 10. The decarboxylative route to azomethine ylides. Background and relevance to pyridoxal decarboxylases, 949–56 PYRIDYLPROPIONATE

- Synthesis of 2-substituted 4-pyridylpropionates. Part 1. Claisen condensation approach, 2785-90
- Synthesis of 2-substituted 4-pyridylpropionates. Part 2. Alkylation approach, 2791-6

### **PYRIDYLSELENO**

- The pyridylseleno group in organic synthesis. Part 5. Amidoseleniation of alkenes, 2113-8
- PYRIDYLSULPHINYLACRYLATE
  - An enantioconvergent route to carbocyclic nucleosides (-)aristeromycin and (–)-neplanocin A via the asymmetric Diels-Alder reaction, 3133-40
- PYRIDYNE
- A new precursor to 3,4-didehydropyridine, and its use in the synthesis of the antitumour alkaloid ellipticine, 247-50

PYRÍMIDINE

- Mechanisms for reactions of halogenated compounds. Part 6. Investigations into the activating effect of ortho-fluorine in nucleophilic aromatic substitution, 255–8 Studies of pyrimidine-2,4-diones: synthesis of novel condensed
- pyrido[2,3-d]pyrimidines via intramolecular cycloadditions, 607-10
- Synthesis of tetrahydropyrimidines with 2-oxoalkyl groups using pyrimidinium salts and enol silyl ethers: formation of diazabicyclo[3.3.1]nona-3,6-diene derivatives, 725-32
- Trifluoromethanethiolate ion. Part 3. Reactions with
- tetrafluoropyridazine and tetrafluoropyrimidine, 1179-82 Fluorination of pyrimidines. Part 2. Mechanistic aspects of the reaction of acetyl hypofluorite with uracil and cytosine derivatives, 1203-8
- Benzopyrans. Part 23. Nitrogen heterocycles fused with or linked to 1-benzopyran from 3-acyl-2-methyl-1-benzopyran-4-one, 1489-
- Reactions of some 1,3-diaminonucleophiles with azlactones, 1659-62
- Purines, pyrimidines, and imidazoles. Part 64. Alkylation and acylation of some aminoimidazoles related to intermediates in purine nucleotide de novo and thiamine biosynthesis, 2541-
- Reaction of acetyl hypofluorite with pyrimidines. Part 3. Synthesis, stereochemistry, and properties of 5-fluoro-5,6-dihydropyrimidine nucleosides, 2547-54 **PYRIMIDINE NUCLEOSIDE**

Nucleosides. Part 6. New chemical modification of the ribosyl moiety in uridines; synthesis of 2,2'-anhydro-1-[5-deoxy-5-(substituted thio)-β-D-arabinofuranosyl]uracil derivatives and their conversion into 3',5'-epithiopyrimidine nucleosides, 2233-42

#### PYRIMIDINONE

Photochemistry of pyrimidin-2(1H)-ones: intermolecular hydrogen

abstraction by an imino group nitrogen, 957-60

Photochemistry of 5-methylpyrimidin-4-ones in acetic acid solution: thermal rearrangements of Dewar pyrimidinones and 4acetoxyazetidin-2-ones, 2653-62

## PYRIMIDÖINDOLE

- Iminophosphorane-mediated annelation of a pyridine or pyrimidine ring into an indole ring: synthesis of β-, γ-carbolines and pyrimido[4,5-b]indole derivatives, 1819–22 **PYROANGOLENSOLIDE**
- Synthetic studies on terpenoid compounds. Part 14. Total synthesis of pyroangolensolide, 445-50
- PYROĹÝSIS
- A novel hydroxylactone from the Lewis acid catalysed pyrolysis of cellulose, 49–52
- Intramolecular nitrene insertions into aromatic and heteroaromatic rings. Part 8. Flash vacuum pyrolysis of 2-azidobenzylpyridines, 69-76
- Thermolysis of polyazapentadienes. Part 8. The formation of pyrroles from 1,1-dialkyl-5-aryl-1,5-diazapentadienes, 333-8
- Thermolysis of polyazapentadienes. Part 9. Gas phase thermolyses of some dienamines, enaminones, and enaminothiones, 339-42
- 3-Hydroxypyrroles and 1H-pyrrol-3(2H)-ones. Part 2. Scope and limitations of the synthesis of pyrrol-3-ones by pyrolysis of aminomethylene Meldrum's acid derivatives, 863-8
- 3-Hydroxypyrroles and 1H-pyrrol-3(2H)-ones. Part 3. Pyrrolones from pyrolyses of aminomethylene Meldrum's acid derivatives: loss of chirality at the site of hydrogen transfer, 869-74
- Preparation and X-ray crystal and molecular structure of 6bromopyrrolizin-3-one, 2145-8
- PYRONE
- Synthesis of the 5,6-dihydro-2-pyrone moiety of (+)-anamarin, 2291 - 6
- Chemistry of ketene acetals. Part 9. A simple 'one-pot' synthesis of 4-hydroxy-δ-lactones and 5,6-dihydro-2-pyrones from 1,1dimethoxypropene and  $\beta$ -oxy aldehydes, 2315–22 **PYROPHOSPHATE**

- Facile and stereospecific synthesis of (S)- and (R)- $[2-{}^{2}H]$  isopentenyl pyrophosphates, 1629–30
- Chemistry of bacterial endotoxins. Part 4. Synthesis of anomeric 2deoxy-2-[(3R)-3-hydroxytetradecanamido]-D-glucopyranosyl phosphate and pyrophosphate derivatives related to 'Lipid A', 243-50

#### PYRROLE

- The synthesis and chemistry of azolenines. Part 8. The Paal-Knorr reaction with cyclic 2-(acylmethyl)-2-alkyl-1,3-diketones: isolation
- Thermolysis of polyazapentadienes. Part 8. The formation of pyrroles from 1,1-dialkyl-5-aryl-1,5-diazapentadienes, 333-8
   Thermolysis of polyazapentadienes. Part 9. Gas phase thermolyses
- of some dienamines, enaminones, and enaminothiones, 339-42
- 3-Hydroxypyrroles and 1H-pyrrol-3(2H)-ones. Part 2. Scope and limitations of the synthesis of pyrrol-3-ones by pyrolysis of aminomethylene Meldrum's acid derivatives, 863-8
- 3-Hydroxypyrroles and 1H-pyrrol-3(2H)-ones. Part 3. Pyrrolones from pyrolyses of aminomethylene Meldrum's acid derivatives: loss of chirality at the site of hydrogen transfer, 869-74 Synthesis of linear ethyl 9-methoxy-1H-benz[f]indole-2-
- carboxylate, 3005-12

#### **PYRROLIDINE**

New routes to heterocycles via sulphenylation of unsaturated amides, 2517-22

#### **PYRROLIDINOXYL**

- Conjugate addition with organometallics and nitration of nitroxide (aminoxyl) free radicals. Synthesis of potentially useful cross-linking spin label reagents, 2905–12
- **PYRROLIDONE**
- Cycloadditions of 3H-indoles, 451-6

## **PYRROLIUM ION**

Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters of  $(\pm)$ -synthanecine A from  $(\pm)$ -3-chloromethyl-2hydroxymethyl-1-methyl-2,5-dihydropyrrolium chloride, 1169-

#### **PYRROLIZIDINE**

- Synthesis of 5,9,9-trisubstituted 1-azabicyclo[3.3.1]nonanes and their conformational analyses, 1057-64
- Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters of  $(\pm)$ -synthanecine A containing 12- to 16-membered rings,

## PYRROLIZIDINE ALKALOID

- A novel synthesis of pyrrolizidine alkaloids by means of an intramolecular carbenoid displacement (ICD) reaction, 833-8 Pyrrolizidine alkaloid analogues. Synthesis of 11-membered
- macrocyclic diesters of (+)-heliotridine, 1165-8
- Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters of  $(\pm)$ -synthanecine A from  $(\pm)$ -3-chloromethyl-2-
- hydroxymethyl-1-methyl-2,5-dihydropyrrolium chloride, 1169-72 PYRROLIŽINE
- Synthesis of 5,9,9-trisubstituted 1-azabicyclo[3.3.1]nonanes and their conformational analyses, 1057-64 **PYRROLIZINONE**

Preparation and X-ray crystal and molecular structure of 6bromopyrrolizin-3-one, 2145-8 PYRROLONE

Nitrogen bridgehead compounds. Part 74. Cyclization of 2-(2-pyridylaminomethylene)succinates in ethanolic sodium ethoxide. Part 2. Michael addition of pyridyldihydropyrrolones, 2019 - 2

## PYRROLOPYRIMIDINE

Liquid-liquid and solid-liquid phase-transfer glycosylation of pyrrolo[2,3-d]pyrimidines: stereospecific synthesis of -deoxy-β-D-ribofuranosides related to 2'-deoxy-7carbaguanosine, 697-702

## **PYRROLÖPYRIMÍDONE**

Synthesis of queuine, the base of naturally occurring hypermodified nucleoside (queuosine), and its analogues, 1637-44

## PYRUVIC ACID

Synthetic methods. Part 23. Rearrangement of some hydroxamic acids into amides. A self-condensation leading to

# disproportionation, 733-8 QUADRICYCLANE

- Valence isomer interconversion of norbornadienes and
- quadricyclanes having an acyl group, 2913-6

## **QUEUINE**

Synthesis of queuine, the base of naturally occurring hypermodified nucleoside (queuosine), and its analogues, 1637-44

## **OUEUOSINE**

Synthesis of queuine, the base of naturally occurring hypermodified nucleoside (queuosine), and its analogues, 1637-44

## **OUINODIMETHANE**

Asymmetric synthesis of trans-benzoperhydroindan: asymmetric induction in intramolecular Diels-Alder reactions of oquinodimethanes, 2835-8

### QUINOL

An approach to (8,3')- and  $(8,5'\cdot7,3')$ -neolignans, 2305-8

## QUINOLINE

- Allenes. Part 46. Synthesis of 1,2-dihydro-4H-3,1-benzoxazines, 4H-3,1-benzoxazines, and 3-cyanoquinolines from allenic and
- acetylenic nitriles, 277-82 Reactions of thionyl chloride with *C*-methyl heterocycles. Part 1. The formation of dichloro(2-quinolyl)methanesulphenyl chlorides from 2-methylquinolines, 3019–24
- Reactions of thionyl chloride with C-methyl heterocycles. Part 2. The formation of [1,2]dithiolo[3,4-c]quinolin-1-ones and bis[dichloro(4-quinolyl)methyl]trisulphanes from 4methylquinolines, 3025-8

#### QUINOLIZIDINE

Incorporation of [1,2-13C2]cadaverine and the enantiomeric [1-<sup>2</sup>H]cadaverines into the quinolizidine alkaloids in *Baptisia* australis, 3275-80

#### **OUINONE**

- A new route to 1-oxygenated carbazoles. Synthesis of the carbazole alkaloids murrayafoline-A and murrayaquinone-A, 235-40
- Autoxidation of a sterically hindered phenanthrene-4,5-diol and conversion of the products into phenanthrenequinones, 1845-50
- Synthesis and acetylation of naphthols as precursors to naturally derived naphthoquinones; crystal structure of the aphin-related 7-O-methyl Quinone A, 2459-68
- Syntheses of the aphid pigment derivatives Quinone A, Quinone A', and Deoxyquinone A as racemates, 2469–76 Lignans and related phenols. Part 18. The synthesis of quinones
- from podophyllotoxin and its analogues, 2573-8 QUINOXALINONE

Use of the nuclear Overhauser effect in the determination of the orientation of aromatic substitution in tricyclic quinoxalinones, 1997-2000

Rearrangements of aromatic carbonyl arylhydrazones of benzene, naphthalene, and azulene, 2721-8

#### QUINUCLIDINE

N-Halogeno compounds. Part 9. N-Fluoroquinuclidinium fluoride-a new electrophilic fluorinating agent, 2805-12

#### RABDOSIA

Structure elucidation of longikaurin A and longikaurin B, new biologically active diterpenoids from *Rabdosia longituba* and chemical conversion of oridonin into dihydrolongikaurin A, 379-

#### RACEMISATION

Coenzyme models. Part 45. Synthesis of atropisomeric flavins and their novel redox-induced racemisation, 313-20

## RACEMIZATION

Synthesis, spontaneous racemization, and photoisomerization of benzo[e]pyrene 9,10-oxide, 3013-8

#### RADICAL

- Reaction of olefins with Se-phenyl (selenothioperoxy)benzoate: a new anti-Markownikoff benzeneselenenylation, 575-82
- On the mechanism of reductive degradation of dithiocarbonates by tributylstannane, 1517-20
- Thermal decomposition of some allyl methoxyarenesulphinates, 1957-60
- New alkoxylated dibenzo[1,4]dichalcogenines as donors for lowdimensional materials: electrochemistry and cation-radical salts, 2095-102
- Thermal interconversion and cyclisation reactions of 2-(arylthio)benzyl radicals and 2-(benzyl)thiophenoxyl radicals, 2875-80
- Steroidal N-nitroamines. Part 4. Intramolecular functionalization of N-nitroamine radicals: synthesis of 1,4-nitroimine compounds, 3255-66

#### **RADICAL ADDITION**

Radical additions onto enols and enol ethers as a stratagem in synthesis. Total synthesis of the unique epoxy-lactone  $(\pm)$ alliacolide found in Marasmius alliaceus, 1107-18

**RADICAL CATION** 

Radical cations. Part 2. Oxidative dimerization of indolizines: a chemical and electrochemical investigation, 3067-70

#### **RADICAL POLYMERIZATION**

Initiation mechanisms in radical polymerization: reaction of t-butoxy radicals with allyl acrylate and with diallyl ether, 485-90

### RADICAL RING CLOSURE

Synthesis of carbocyclic nucleosides: preparation of (-)-5'homoaristeromycin and analogues, 2927-32

#### RADICININ

Studies on the mechanism of polyketide-derived biosynthesis of deoxyradicinin and related metabolites of Alternaria helianthi, 1283-8

## RADIOHALOGENATION

No-carrier-added radiobromination and radioiodination of aromatic rings using in situ generated peracetic acid, 779-

#### REARRANGEMENT

The preparation of 3-benzyl-6-( $\alpha$ -methylbenzyl)- and 3,6-bis( $\alpha$ methylbenzyl)-s-tetrazines by alkylation of 3,6-dibenzyl-stetrazine and a study of their rearrangements to imidazo[1,2-b]s-tetrazines in alkali, 1439-46

The stereochemistry of a rearrangement and fragmentation reaction of ring D of 13-hydroxygibberellins, 1451-4

Aromatization of 7β,17β-diacetoxy-4-methyleneandrost-5-ene, 1461-

Steroidal allylic and homoallylic rearrangements during

halogenation with triphenylphosphine and carbon tetrachloride, 1469-72

## REDUCTION

Role of remote heteroatoms and nature of the reducing agents on the stereochemical course of reductions of the carbon-nitrogen  $\pi$ -bond of a new class of tetrahydropyridines, 611-22

- Synthesis and reaction of optically active morpholinones, 1521-
- Cycloaddition of unactivated 2-aza-1,3-dienes with heterocumulenes: a convenient route to the synthesis of 1,3difunctionalized compounds, 1739-44
- 1,3,9,11,12,14-Hexa-azapentacene-2,4,8,10(3H,9H,12H,14H)tetraones (doubled 5-deazaflavins) with potential for oxido reduction, 1809-12
- A formal total synthesis of  $(\pm)$ -herbertene, 2485–90

#### **REDUCTION** (contd)

- Syntheses of chlorins from unsymmetrically substituted iron porphyrins, 3119-32
- **REDUCTIVE COUPLING**
- Samarium(II) di-iodide induced reductive coupling of  $\alpha$ , $\beta$ unsaturated esters with carbonyl compounds leading to a facile synthesis of y-lactone, 1669-76
- Magnesium- and titanium-induced reductive coupling of carbonyl compounds: efficient syntheses of pinacols and alkenes, 1729-

#### **REDUCTIVE DEGRADATION**

On the mechanism of reductive degradation of dithiocarbonates by tributylstannane, 1517-20

## **REDUCTIVE DEHALOGENATION**

Preparation of deuteriated 1-phenylethanols by reductive dehalogenation of the corresponding halogenoacetophenones with Raney alloys in an alkaline deuterium oxide solution, 179-

#### REGIOCHEMISTRY

The regiochemistry and stereochemistry of 1,3-dipolar cycloaddition of a cyclic nitrone, 597-606

#### REGIORÉVERSAL

Regioreversed nucleophilic substitution of 2-(allyloxy)benzothiazole by allylic Grignard reagents. A regioselective synthesis of 1,5dienes, 1301-4

#### **REGIOSELECTIVE SYNTHESIS**

Regio- and stereo-selective synthesis of  $\beta$ -sulphonyl- $\alpha$ , $\beta$ -unsaturated carbonyl compounds via an iodosulphonylationdehydroiodination reaction, 1029-32

#### REGIOŚELECTIVITY

- Heterocycles from carbohydrate precursors. Part 40. Kinetic and thermodynamic products of ketalation of 1-C-substituted L-threoglycerol: a regioselective formation of 1,3-dioxolanes, 133-8
- Titanium as a regio- and stereo-selective control element in the reaction of  $\alpha$ -alkoxyallylic phosphine oxide anions with carbonyl compounds, 1039–46
- Regioreversed nucleophilic substitution of 2-(allyloxy)benzothiazole by allylic Grignard reagents. A regioselective synthesis of 1,5dienes, 1301-4
- Regioselective synthesis of hydroxy sulphides via
- trifluoroacetoxysulphenylation of derivatives of allylic alcohols, 2509-16

#### RESORCINOL

- Thermal Claisen rearrangement studies on 4,6- and 2,4-
- diacetylresorcinol bisallyl ethers: observation of loss or [1,5] sigmatropic shift of acetyl groups, 623-8

#### RETIČULINE

- The biosynthesis of glaucine in Litsea glutinosa, 1447-50
- RHODIUM Synthesis of some thiophenium bis(t-butoxycarbonyl)methylides, 1023 - 8
  - Rhodium-catalysed [2 + 2 + 2]-cycloadditions of acetylenes, 1357-64
  - Rhodium(1)-catalysed reactions of enynes. Linear coupling vs. cycloaddition, 1365-70

## **RHODIUM CARBENOID**

Rhodium carbenoid mediated cyclisations. Part 2. Synthesis of cyclic ethers, 1417--24

## **RHODIUM CATALYSIS**

Efficient 1,4-asymmetric induction utilizing electrostatic interaction between ligand and substrate in the asymmetric hydrogenation of didehydrodipeptides, 1787-90

#### RIBOFURANOSYLACETONE

Aldol reaction of reducing sugars. Convenient stereoselective synthesis of ribofuranosylacetone and chiral dienones, 2861-

#### **RIBOFURANOSYLHYDRAZINE**

- Synthesis of nucleosides using ketene dithioacetals, 2309-14 RIBONUCLEOSIDE
- A new synthesis of 1-arylpiperidin-4-ols, 2881-6

### RIBOSIDÉ

Stereoselective cyclizations of unsaturated esters derived from 2,3-O-isopropylidene-D-ribose, 433-8

### RIFAMYCIN

The ansamycins: synthesis of the naphthoquinonoid nucleus of rifamycin W; crystal structure verification of a key naphthalenic intermediate, 2477-84

## **RING CONTRACTION**

Ring contraction of 1,2,4-benzoxadiazines to benzoxazoles, 2169-74

- **RING COUPLING**
- Oligomeric flavanoids. Part 1. Novel dimeric profisetinidins from Colophospermum mopane, 1325–30
- RING CURRENT EFFÉCT
- Synthesis and properties of methano-bridged tetradehydro-[26]-, -[28]-, -[30]-, -[32]-, -[34]-, and -[38]-annulene, 385-94 RING OPENING
- Retention of stereochemistry in the ring-opening of penicillin V sulphone p-nitrobenzyl ester, 183-8

#### SALICŸLALĎEHYDE

Formation of oxygen-bridged heterocycles in the Hantzsch synthesis with 4-(2-hydroxyphenyl)but-3-en-2-one, 2053-8

### SALICYLATE

Thermorubin biosynthesis: evidence for the involvement of both salicylic acid and an undecaketide, 1865-8

SALINOMYCIN

Chemistry of bis-spiroacetals. Synthesis of the 1,6,8-

- trioxadispiro[4.1.5.3]pentadecane ring system, 125 32 SALIX SPP.
- [2',2']-(+)-Catechin-(+)-taxifolin from commercial willow bark: structure, bonding positions and oxidative cleavage, 219-26 SAMARIUM

Samarium(II) di-iodide induced reductive coupling of  $\alpha,\beta$ unsaturated esters with carbonyl compounds leading to a facile synthesis of y-lactone, 1669-76

#### SANTONIN

- Synthesis of erivanin and 1-epierivanin from  $1-(\alpha)$ -santonin, 2633-
- Approach to the synthesis of side-chain eudesmanediols: synthesis of kudtriol from  $1-(\alpha)$ -santonin, 3149-54

## **SAPONIN**

- Starfish saponins. Part 34. Novel steroidal glycoside sulphates from the starfish Asterias amurensis, 1337-48
- Structural elucidation of alfalfa root saponins by mass spectrometry and nuclear magnetic resonance analysis, 3071-80
- SCALARADIAL
  - Total syntheses of marine sponge metabolites. Part 3.
  - Stereoselective total synthesis of  $(\pm)$ -12-deoxyscalaradial, 1349-

#### SCHIFF BASE COMPLEX

General method for the asymmetric synthesis of a-amino acids via alkylation of the chiral nickel(11) Schiff base complexes of glycine and alanine, 305–12

#### SCLEROPHYTIN

Sclerophytins A and B. Isolation and structures of novel cytotoxic diterpenes from the marine coral Sclerophytum capitalis, 2537-40

#### SCLEROPHYTUM CAPITALIS

Sclerophytins A and B. Isolation and structures of novel cytotoxic diterpenes from the marine coral Sclerophytum capitalis, 2537-40

#### SELECTIVE PROTECTION

- Selective protection of polyamines: synthesis of model compounds and spermidine derivatives, 1905–12 SELENENYL
- - Reactive selenoaldehydes formed from selenenyl derivatives by 1,2elimination and trapped in situ as cycloadducts with conjugated dienes, 1913-2

### **SELENENYLATION**

Reaction of olefins with Se-phenyl (selenothioperoxy)benzoate: a new anti-Markownikoff benzeneselenenylation, 575-82

#### SELENIDE

Synthesis of benzimidazolyl selenophenes, 1033-8

#### SELENIUM

The pyridylseleno group in organic synthesis. Part 5. Amidoseleniation of alkenes, 2113-8

#### **SELENOALDEHYDE**

Reactive selenoaldehydes formed from selenenyl derivatives by 1.2elimination and trapped *in situ* as cycloadducts with conjugated dienes, 1913-22

### SELENOL

- Synthesis of benzimidazolyl selenophenes, 1033-8
- SELENOPHENE

#### Synthesis of benzimidazolyl selenophenes, 1033-8

#### SELENOPYROPHOSPHATE

Reaction of oxophosphorane-sulphenyl and -selenenyl chlorides with dialkyl trimethylsilyl phosphites. Novel synthesis of compounds containing a sulphur or selenium bridge between two phosphoryl centres, 2197-202

#### SERINE HYDROXYMETHYLTRANSFERASE

Structural studies on bioactive compounds. Part 7. The design and synthesis of a-substituted serines as prospective inhibitors of serine hydroxymethyltransferase, 2903–4

SESQUITERPENE

- Synthesis of aromatic sesquiterpenes,  $(\pm)$ -cuparene and  $(\pm)$ laurene by means of an intramolecular carbenoid displacement (ICD) reaction, 193-200
- Secondary mould metabolites. Part 19. Structure elucidation and absolute configuration of melledonals B and C, novel
- absolute configuration of melledonals B and C, novel antibacterial sesquiterpenoids from Armillaria mellea. X-Ray molecular structure of melledonal C, 503-10 New germacrane derivatives from Nanothamnus sericeous. X-Ray molecular structure of (1R,4R,5R,6R,10R)-1,10;4,5-diepoxy-11-hydroxygermacran-6-yl (Z)-2-methylbut-2-enoate, 657-62 Metabollites of the higher fungi. Part 23. The punctaporonins.
- Novel bi-, tri-, and tetra-cyclic sesquiterpenes related to caryophyllene, from the fungus Poronia punctata (Linnaeus:Fries) Fries, 823-32
- New pseudoanisatin-like sesquiterpene lactones from the bark of Illicium dunnianum, 1537-40
- A formal total synthesis of  $(\pm)$ -herbertene, 2485–90
- Total synthesis of  $(\pm)$ -pentalenne,  $(\pm)$ -pentalenic acid, and  $(\pm)$ -deoxypentalenic acid through an intramolecular double Michael reaction, 2963-70
- Studies on a new route to  $(\pm)$ -copaene and  $(\pm)$ -ylangene, 3223-8 SESTERTERPENES
  - Total syntheses of marine sponge metabolites. Part 3. Stereoselective total synthesis of  $(\pm)$ -12-deoxyscalaradial, 1349-52

#### SIGMATROPIC REARRANGEMENT

- 2H-Benzimidazoles (isobenzimidazoles). Part 3. Thermal isomerisation of substituted 2H-benzimidazoles to 1Hbenzimidazoles, 991-8
- An investigation of potential [2,3]-sigmatropic rearrangements of pentafluorophenyl-aza-, -thio-, and -methylene-sulphonium ylides, 2023-6
- Rearrangements of aromatic carbonyl arylhydrazones of benzene, naphthalene, and azulene, 2721-8
- Selective preparation and cyclization of 2-(2-hydroxyphenyl)-2-(isopropylthio)ethanols. New synthesis of 1-benzofurans, 3029-36
- SILICA

Autoxidation of naphthols: a new entry to the perylene system, 583-6

SILYL

- Chemistry of silyl thioketones. Part 4. 2,4,6-Triaryl-2,4,6tris(trimethylsilyl)-1,3,5-trithianes from silyl thioketones: crystal structure of 2,4,6-triphenyl-2,4,6-tris(trimethylsilyl)-1,3,5-trithiane and stereochemistry of desilylation with fluoride ion, 1499-502
- SILYL ETHER
  - Synthesis of tetrahydropyrimidines with 2-oxoalkyl groups using pyrimidinium salts and enol silyl ethers: formation of diazabicyclo[3.3.1]nona-3,6-diene derivatives, 725-32
- SILYLIMINE
  - Reaction of silylimines with ester enolates. Synthesis of Nunsubstituted azetidinones starting from nitriles, 945-8
- SILYL THIOKETONE
- Chemistry of silyl thioketones. Part 4. 2,4,6-Triaryl-2,4,6tris(trimethylsilyl)-1,3,5-trithianes from silyl thioketones: crystal structure of 2,4,6-triphenyl-2,4,6-tris(trimethylsilyl)-1,3,5-trithiane and stereochemistry of desilylation with fluoride ion, 1499-502 SODIUM BROMITE
- Ready oxidation of alcohols to carbonyl compounds by sodium bromite in methylene dichloride in the presence of aluminium oxide. 2423-4
- SOLAR ENERGY
- Valence isomer interconversion of norbornadienes and quadricyclanes having an acyl group, 2913-6
- SOLÍD PHÁSE
- Peptide synthesis. Part 12. 3,4-Dihydro-4-oxo-1,2,3-benzotriazin-3yl esters of fluorenylmethoxycarbonyl amino acids as selfindicating reagents for solid phase peptide synthesis, 2887-94
- Peptide synthesis. Part 13. Feedback control in solid phase synthesis. Use of fluorenylmethoxycarbonyl amino acid 3,4dihydro-4-oxo-1,2,3-benzotriazin-3-yl esters in a fully automated system, 2895-902

#### SOLVENT CHELATION

Unusual stereoselection in the reaction of dianions derived from 1-

phenylsulphonylalkan-2-ols with electrophilic reagents, 2397-402

#### **SOLVOLYSIS**

- Chemistry of 2-bromo-2-methylpropanamides. Synthesis and
- solvolytic behaviour of oxazolidinones and spiro-oxazolidinones, 43-8
- SORBIC ACID

Unsaturated carboxylic acid polyenolates. Lithium trienolate of sorbic acid as a d<sup>6</sup> synthon: addition to ketones and unsaturated ketones, 2797-804 SPERMIDINE

Selective protection of polyamines: synthesis of model compounds and spermidine derivatives, 1905–12 SPHAERANTHUS INDICUS

A new eudesmenolide and 2-hydroxycostic acid from Sphaeranthus indicus Linn. X-Ray molecular structure of 4x,5x-epoxy-7xhydroxyeudesmanolide, 157–60

- SPHINGOMYELIN
- Synthesis and spectral properties of chemically and stereochemically homogeneous sphingomyelin and its analogues, 423-32
- SPIN LABEL
- Conjugate addition with organometallics and nitration of nitroxide (aminoxyl) free radicals. Synthesis of potentially useful crosslinking spin label reagents, 2905-12
- SPIRANATION
- 2 $\beta$ -Isopropylidene-, 2 $\beta$ -t-butyl-, and 2 $\beta$ -isopropyl-gibberellin A<sub>4</sub> and spiro[gibberellin A<sub>4</sub>-2,1'-cyclopropane], 1973-82 SPIROACETAL
- - Enantiospecific synthesis of the spiroacetal moieties of avermectins  $A_{1b}, B_{1b}, A_{1a}, \dot{B}_{1a}, A_{2b}, B_{2b}, A_{2a}, and B_{2a}$  and milberrycins  $\alpha_7$  and  $\alpha_8, 85-98$
  - Chemistry of bis-spiroacetals. Synthesis of the 1,6,8-
- trioxadispiro[4.1.5.3]pentadecane ring system, 125-32 SPIROALKANE-1,3'-INDOLINE
- Synthesis of 1'-(3-dimethylaminopropyl)-2'-substituted spiro[cycloalkane-1,3'-indolines], 3243-8
- SPIROCYCLISATION
  - Palladium-catalysed spirocyclisation of 3-acetoxy-1-(4aminoalkyl)cyclohexenes, 2255-8
- SQUALENE
  - Stereospecific synthesis of squalenoid epoxide vinyl ethers as inhibitors of 2,3-oxidosqualene cyclase, 461-70
- **STANNANE** 
  - Organic synthesis with carbon monoxide: the synthesis of carbamoylstannanes and aromatic carbamoylation, 569-74 On the mechanism of reductive degradation of dithiocarbonates by
- tributylstannane, 1517-20 STARFISH
  - Starfish saponins. Part 34. Novel steroidal glycoside sulphates from
  - the starfish Asterias amurensis, 1337-48
- STEREOCHEMISTRY
  - The regiochemistry and stereochemistry of 1,3-dipolar cycloaddition of a cyclic nitrone, 597-606 A synthesis of (2*S*,6*S*)-2-hydroxymethyl-6-methoxytetrahydropyran;
  - a useful chiral intermediate, 999-1002
  - Compounds with bridgehead nitrogen. Part 54. The stereochemistry of some derivatives of perhydrothiazolo[3,4-*a*]pyridine and the synthesis of 9-methylperhydro-3,8-methano-1,3-thiazocines, 1173-
  - Oligomeric isoflavonoids. Part 1. Structure and synthesis of the first (2,3')-isoflavone-isoflavan dimer, 1227-36
  - The stereochemistry of a rearrangement and fragmentation reaction of ring D of 13-hydroxygibberellins, 1451-4
  - Stereochemistry of hydroboronation and osmylation of 3a,5cycloandrost-6-en-17-one, 1465-8
  - Stereochemistry of epoxidation of some A-norandrost-5-enes, 1473-
  - The chemistry of terpenes. Part 27. The halogenation of (+)thujone and of (-)-carvotanacetone, and the stereochemistry and mechanism of formation of 'tribromothujone', 1527-36
- Stereochemistry of cysteinesulphinic acid decarboxylase, 1547-50
- Syntheses and reactions of optically active alkyltoluene-psulphinamides. Part 2. Substitution at sulphur with retention of configuration, 1695-8
- Preparation of steroidal 5β,6β-epoxides and their oxidation by chromium trioxide, 2001-4
- Reaction of acetyl hypofluorite with pyrimidines. Part 3. Synthesis, stereochemistry, and properties of 5-fluoro-5,6-dihydropyrimidine nucleosides, 2547-54

#### STEREOCHEMISTRY (contd)

- Stereo-structures of reaction products of thymidine epoxides with amines and L-amino acid ethyl esters, 2555-62
- Identification of the absolute stereochemistry of D- and L-digitoxose using a chiral high-pressure liquid chromatography column, 2621-4
- Studies on the constituents of Asclepiadaceae plants. Part 67. Further studies on glycosides with a novel sugar chain containing a pair of optically isomeric sugars, D- and L-cymarose, from Cynanchum africanum, 2625-32
- Stereochemical features of the anomerizations in the 5,6-
- dihydrothymine nucleoside series, 2681–6 X=Y-ZH Systems as potential 1,3-dipoles. Part 11. Stereochemistry of 1,3-dipoles generated by the decarboxylative route to azomethine ylides, 2693-702
- A stereochemical study of the dissociative substitution reactions of  $N-(S)-\alpha$ -phenylethyl-P-t-butylphosphonamidic chloride with tbutylamine and isopropylamine, 2737-44

#### **STEREÓCONTROL**

- Stereocontrolled synthesis of the CDF part of *Aconitum* alkaloids via intramolecular double Michael reaction, 1155–64
- Stereocontrolled synthesis of the brassinolide side-chain: formal synthesis of brassinolide, 1503-8
- A stereocontrolled approach to electrophilic epoxides, 2663–74 STEREOELECTRONIC EFFECT
- Stereo- and regio-control of electrophilic additions to cyclohexene systems by neighbouring groups: participation of allylic and homoallylic ester groups in hypobromous acid addition to some 5-unsaturated cholestane derivatives, 2297-304

#### STEREOSELECTION

- Unusual stereoselection in the reaction of dianions derived from 1phenylsulphonylalkan-2-ols with electrophilic reagents, 2397-402 STEREOŠELĖCTIVE OXIDATION
- (+)-(3-Oxocamphorsulphonyl)oxaziridine as a highly
- stereoselective reagent for the oxidation of sulphides to chiral sulphoxides, 1753

#### STEREOSELECTIVE REDUCTION

- Synthesis of  $\gamma$ -lactam analogues of carbapenems with substituted-thio groups at the C-3 position, 2345–52
- Stereoselective condensation of bis-*p*-tolylthiomethane with lactic acid derivatives through an acylation-reduction strategy: synthesis of protected 4-deoxy-L-threose and 4-deoxy-L-erythrose, 2369 76
- Acyl transfer reactions with phosphine oxides: synthesis of Ehomoallylic alcohols, cyclopropyl ketones, and γ-hydroxy ketones, 2971-8 STEREOSELECTIVE SYNTHESIS

Regio- and stereo-selective synthesis of  $\beta$ -sulphonyl- $\alpha$ , $\beta$ -unsaturated carbonyl compounds via an iodosulphonylationdehydroiodination reaction, 1029-32

#### STEREOSELECTIVITY

- Titanium as a regio- and stereo-selective control element in the reaction of a-alkoxyallylic phosphine oxide anions with carbonyl compounds, 1039-46
- Tetrahydroisoquinolines. Part 4. Enantioselective conversion of +)-amphetamine into (+)-(1R,3S,4S)- and (-)-(1S,3S,4R)-1,2,3,4-tetramethyl-1,2,3,4-tetrahydroisoquinoline via tricarbonyl(arene)chromium methodology, 1481-8
- Synthesis of single isomers (E or Z) of unsaturated carboxylic acids by the Horner-Wittig reaction, 1799–808

Formation of oxygen-bridged heterocycles in the Hantzsch synthesis with 4-(2-hydroxyphenyl)but-3-en-2-one, 2053–8 Stereoselective C-4 functionalisation of flavan-3-ols. The significance of conformational mobility of the flavan heterocycle in stereoselectivity at the benzylic carbon, 2179-84

Stereoselectivity during fungal sulphoxidations of 1,3-dithiolanes, 2827 - 30

## STEREOSPECIFIC

- Facile and stereospecific synthesis of (S)- and (R)-[2-<sup>2</sup>H]isopentenyl pyrophosphates, 1629–30
- STEREOSPECIFICITY

Synthesis of enamides, 2185–96

Syntheses of the aphid pigment derivatives Quinone A, Quinone A', and Deoxyquinone A as racemates, 2469-76

#### STEROID

- Synthesis of 13a-steroids. A new route to 16-substituted 13aandrostanes, 23-30
- Photo-induced molecular transformations. Part 87. Regiospecific photo-Beckmann rearrangement of steroidal α,β-unsaturated

ketone oximes: synthesis of some steroidal enamino lactams, 321-

- 10B-Chloro-17B-hydroxyestra-1,4-dien-3-one and its related compounds, 457-60
- Total synthesis of cortisol: application to selective deuteriation at C-1 and C-19, 587-92
- Role of remote heteroatoms and nature of the reducing agents on the stereochemical course of reductions of the carbon-nitrogen  $\pi$ -bond of a new class of tetrahydropyridines, 611-22
- Petuniasterones, novel ergostane-type steroids of Petunia hybridia Vilm. (Solanaceae) having insect-inhibitory activity. X-Ray molecular structure of the 22,24,25 [(methoxycarbonyl)orthoacetate] of 7x,22,24,25tetrahydroxyergosta-1,4-dien-3-one and of 1a-acetoxy-24,25-
- epoxy-7a-hydroxy-22-(methylthiocarbonyl)acetoxyergost-4-en-3one, 711-8
- Peracid oxidation of 16-arylidene- and 16-alkylidene-17-oxosteroids, 875-80
- A novel route to the des-A corticosteroids, 885-8
- Acid-catalysed rearrangements of steroid alkenes. Part 1. Rearrangement of 5a-cholest-7-ene, 1065-70
- Acid-catalysed rearrangements of steroid alkenes. Part 2. A reinvestigation of the backbone rearrangement of cholest-5-ene, 1071-6
- Aromatization of 7β,17β-diacetoxy-4-methyleneandrost-5-ene, 1461-
- Steroidal allylic and homoallylic rearrangements during halogenation with triphenylphosphine and carbon tetrachloride, 1469 - 72
- Stereochemistry of epoxidation of some A-norandrost-5-enes, 1473-
- Structure-reactivity relationships in normal and 19-nor-5,10-secosteroidal cyclodecenone systems. Part 1. Acid-catalyzed and thermal reactions, 1495-8
- Stereocontrolled synthesis of the brassinolide side-chain: formal synthesis of brassinolide, 1503-8
- Boar taint steroid derivatives for immunological studies. Synthesis of 11x-hydroxy-5x-androst-16-en-3-one and its hemisuccinate, 1653 - 8
- Molecular rearrangement of 3-substituted 4-chloro-4,5-epoxide systems in ring  $\tilde{A}$  of steroids, 1961–72
- Preparation of steroidal 5β,6β-epoxides and their oxidation by chromium trioxide, 2001-4
- An aromatization reaction of a 13a-methyl steroid, 2005-8
- A mild method for the conversion of 1,3-glycols into unsaturated alcohols, 2013-8
- Syntheses of 2x- and  $2\beta$ -deuterio-testosterones and -androst-4-ene-3,17-diones, 2027–32
- Synthesis of 15β-hydroxy-24-oxocholesterol and 15β,29-dihydroxy-7-oxofucosterol, 2161-8
- Synthesis of putative precursors of ecdysone. Part 3. Synthesis of 3β,14x,25-trihydroxy-5β-cholest-7-en-6-one, 2353-64
- Synthesis of aromatic steroids by palladium(0) coupling and electrocyclic ring closure, 2603-6
- Oxidations of enone systems in steroids by oxidizers with reversible redox potential, 2687-92
- The synthesis of a conjugate of progesterone with Lucifer Yellow VS: a potential probe for fluoroimmunoassay of steroids, 2979-82
- Boar taint steroid derivatives for immunological studies. Synthesis of 11a-hydroxy-5a-androst-16-en-3-one and its hemisuccinate, 3059-8
- Steroidal N-nitroamines. Part 4. Intramolecular functionalization of N-nitroamine radicals: synthesis of 1,4-nitroimine compounds, 3255-66

## STEROIDAL GLYCOSIDE

Starfish saponins. Part 34. Novel steroidal glycoside sulphates from the starfish Asterias amurensis, 1337-48

- STEROL
- Penasterol, a novel antileukemic sterol from the Okinawan marine sponge *Penares* sp., 2403–6 STEROL OXIDASE

Synthesis of new nitro and amino sterols; potential inhibitors of 4methyl sterol oxidase, 3239-42

### STIGMASTANOLACTONE

Stereocontrolled synthesis of the brassinolide side-chain: formal synthesis of brassinolide, 1503-8

STILBENE

Cyclopalladiated aromatic imines in organic synthesis: the

### STILBENE

- preparation of cinnamonitriles, cinnamates, unsymmetrical stilbenes, isoquinolones, and isoquinolines, 1317–24 STILBENE GLYCOSIDE
- Stilbene glycosides from Guibourtia coleosperma: determination of glycosidic connectivities by homonuclear nuclear Overhauser
- effect difference spectroscopy, 37-42
- STREPTOCOCCUS
  - Synthesis of oligosaccharides corresponding to the antigenic determinants of the β-haemolytic *Streptococci* Group A. Part 1. Overall strategy and synthesis of a linear trisaccharide, 2103-

### STREPTOMYCES

- Studies of precursor-directed biosynthesis with Streptomyces sp. Part 1. Isolation of manumycin analogues by feeding of aminobenzoic acids as  $C_7N$  starter units, 2123-8 Biosynthesis of streptothricin F. Part 6. Formation and
- intermediacy of D-glucosamine in Streptomyces L-1689-23, 2283-
- Biosynthesis of the polyether antibiotic monensin-A. Results from the incorporations of labelled acetate and propionate as a probe of the carbon chain assembly processes, 3183-94

#### **STREPTOMYCETES**

Butyrate metabolism in streptomycetes. Characterization of an intramolecular vicinal interchange rearrangement linking isobutyrate and butyrate in Streptomyces cinnamonensis, 3195-

## STREPTOTHRICIN

Biosynthesis of streptothricin F. Part 6. Formation and intermediacy of D-glucosamine in Streptomyces L-1689-23, 2283-

#### STYRENE

- Reaction of  $\alpha$ -substituted  $\beta$ -bromostyrenes with
  - dicarbonyldicyanonickelate(0) anion in alkaline medium under carbon monoxide, 1993-6

#### SUBSTANCE P

Preparation and <sup>11</sup>C-labelling of a substance P analogue containing D-tryptophan in positions 7 and 9, 497–502

#### SUGAR

- Structural elucidation of alfalfa root saponins by mass spectrometry and nuclear magnetic resonance analysis, 3071-80
- A convenient method for the S-glycosidic bond formation. Synthesis of p-iodophenyl 4'-thiomaltotrioside and its 2",3"-unsaturated analogue, 3345-52
- Higher-carbon sugars. Part 12. The synthesis of new octitols from D-glucose and D-mannose via the osmylation of unsaturated precursors, 3391-8

## SULPHAMIDE

Reactivity of malononitrile towards sulphamide and N-substituted sulphamides: synthesis and hydrolysis reactions of 3,5-diamino-1,2,6-thiadiazine 1,1-dioxides, 1271-6

#### SULPHANE

Reactions of thionyl chloride with C-methyl heterocycles. Part 1. The formation of dichloro(2-quinolyl)methanesulphenyl chlorides from 2-methylquinolines, 3019-24

## SULPHENIC AČID

Studies related to penicillins. Part 25. Synthesis of N-phenylacetyl and N-triphenylmethyl derivatives of 6-aminopenam 1-oxides, 2259--70

### SULPHENYLATION

Regioselective synthesis of hydroxy sulphides via

trifluoroacetoxysulphenylation of derivatives of allylic alcohols, 2509-16

- New routes to heterocycles via sulphenylation of unsaturated amides, 2517-22
- Trifluoroacetoxysulphenylation of unsaturated nitriles and transformation of the adducts into lactones, 2523–32 SULPHENYL CHLORIDE

Reactions of thionyl chloride with C-methyl heterocycles. Part 1. The formation of dichloro(2-quinolyl)methanesulphenyl chlorides from 2-methylquinolines, 3019–24

#### SULPHIDE

- Reaction of phenylnitrenium ion with sulphides. A novel synthetic method for aminophenyl sulphide derivatives, 521-8
- Regioselective synthesis of hydroxy sulphides via
- trifluoroacetoxysulphenylation of derivatives of allylic alcohols, 2509-16
- Direct incorporation of a  $6\alpha(7\alpha)$ -formamido group into penicillin and cephalosporin sulphides and sulphoxides, 2865-74

## SULPHINIC ACID

Studies related to pencillins. Part 27. A strategy for the conversion of 1,1-dioxides of penicillanates into 1,1-dioxides of 3-methylceph-3-em-4-carboxylates, 3359-66

## **SULPHINYL**

Thermal decomposition of some allyl methoxyarenesulphinates, 1957-60

## SULPHONE

Synthesis of allyl and dienyl sulphones via lodosulphonylation of conjugated dienes, 981-2 SULPHONIUM

An investigation of potential [2,3]-sigmatropic rearrangements of pentafluorophenyl-aza-, -thio-, and -methylene-sulphonium ylides, 2023-6

#### **SULPHOXIDATION**

Stereoselectivity during fungal sulphoxidations of 1,3-dithiolanes, 2827-30

## **SULPHOXIDE**

- (+)-(3-Oxocamphorsulphonyl)oxaziridine as a highly stereoselective reagent for the oxidation of sulphides to chiral
- sulphoxides, 1753-8 Direct incorporation of a  $6\alpha(7\alpha)$ -formamido group into penicillin and cephalosporin sulphides and sulphoxides, 2865-74
- SULPHUR
- Syntheses and reactions of optically active alkyltoluene-p-sulphinamides. Part 2. Substitution at sulphur with retention of configuration, 1695–8 SULPHUR NITRIDE

Sulphur nitride in organic chemistry. Part 17. Preparation of 1,8-diaminocarbazole, 1869-74 SUPERSTRUCTURED PORPHYRIN

Both-faces hindered porphyrins. Part 4. Synthesis of functionalized basket-handle porphyrins designed for a strict intramolecular axial ligation in superstructured complexes, 283-96

SYNTHANECINE

Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters of  $(\pm)$ -synthanecine A containing 12- to 16-membered rings, 1923-8

SYNTHANECINE A

Pyrrolizidine alkaloid analogues. Synthesis of macrocyclic diesters of  $(\pm)$ -synthanecine A from  $(\pm)$ -3-chloromethyl-2hydroxymethyl-1-methyl-2,5-dihydropyrrolium chloride, 1169-

### TANNIN

Oligomeric flavanoids. Part 3. Structure and synthesis of phlobatannins related to (-)-fisetinidol-( $4_{\alpha}$ ,6)- and ( $4_{\alpha}$ ,8)-(+)-catechin profisetinidins, 3323–30

## TERPENE

- Acid-catalysed terpenylations of olivetol in the synthesis of cannabinoids, 1243-50
- Terpenylations using (R)-(-)- $\alpha$ -phellandrene. Synthesis of the (3S,4R)-8,9-dihydro-o- and -p-cannabidiols, their iso-THC's and the natural dihydrochalcone (3S, 4R)-(+)-linderatin, 1251-
- Synthesis of cannabinoids carrying  $\omega$ -carboxy substituents: the cannabidiols, cannabinol and  $\Delta^1$  and  $\Delta^6$ -tetrahydrocannabinols of this series, 1255-62
- Synthesis of bibenzyl cannabinoids, hybrids of two biogenetic series found in *Canabis sativa*, 1263-70 The chemistry of terpenes. Part 27. The halogenation of (+)-
- thujone and of (-)-carvotanacetone, and the stereochemistry and mechanism of formation of 'tribromothujone', 1527-36
- A novel synthesis of cyclobutane monoterpenes  $(\pm)$ -grandisol and  $(\pm)$ -lineatin, 2433-8
- Synthesis of erivanin and 1-epierivanin from 1-(a)-santonin, 2633-8 TERPENOID
- Synthetic studies on terpenoid compounds. Part 14. Total synthesis of pyroangolensolide, 445-50
- Studies in terpenoid biosynthesis. Part 35. Biosynthetic sequences leading to the diterpenoid aphidicolin in Cephalosporium aphidicola, 1477-80
- Studies in terpenoid biosynthesis. Part 38. The role of an 16β,17epoxyaphidicolane in the minor biosynthetic pathway leading to aphidicolin, 2009-12
- A mild method for the conversion of 1,3-glycols into unsaturated alcohols, 2013-8

TESTOSTERONE

Syntheses of 2a- and 2\beta-deuterio-testosterones and -androst-4-ene-3,17-diones, 2027-32

### TETRACYCLOTRIDECANE

- 2.3.7.8-Tetra-azatetracyclo[7.3.1.0<sup>4,12</sup>0<sup>6,10</sup>]tridecanes and 2,4,6,8-tetra(alkylamino)bicyclo[3.3.1]nonanes, 2501–8 TETRAHYDRODICRANENONE
- Synthesis of tetrahydrodicranenone B, 1401-6
- **TETRAHYDROISOOUINOLINE** 
  - Tetrahydroisoquinolines. Part 4. Enantioselective conversion of (+)-ampletamine into (+)-( $1R_{3S}(4S)$ - and (-)-( $1S_{3S}(4R)$ -1,2,3,4-tetramethyl-1,2,3,4-tetrahydroisoquinoline via
- tricarbonyl(arene)chromium methodology, 1481–8 TETRASULPHUR TETRANITRIDE

Organic heterocyclothiazencs. Part 7. Chemistry of 1,3,5,2,4,6trithiatriazepines, 1745-8

- TETRAZINE
- The preparation of 3-benzyl-6-( $\alpha$ -methylbenzyl)- and 3,6-bis( $\alpha$ methylbenzyl)-s-tetrazines by alkylation of 3,6-dibenzyl-s tetrazine and a study of their rearrangements to imidazo[1,2-b]s-tetrazines in alkali, 1439–46

#### TETRAZOLE

- Nucleophilic attack on 4,7-disubstituted benzofurazans and their Noxides: synthesis of tetrazolo[1,5-a]azepines, 145-50
- TETRAZOLÍUM SALT
- Oxidations of enone systems in steroids by oxidizers with reversible redox potential, 2687-92
- TETRAZOLOAZEPINE
- Nucleophilic attack on 4,7-disubstituted benzofurazans and their *N*-oxides: synthesis of tetrazolo[1,5-*a*]azepines, 145–50 THERMAL-INDUCED CYCLIZATION

Structure-reactivity relationships in normal and 19-nor-5,10-seco-steroidal cyclodecenone systems. Part 1. Acid-catalyzed and thermal reactions, 1495–8 THERMAL ISOMERISATION

- - 2H-Benzimidazoles (isobenzimidazoles). Part 3. Thermal isomerisation of substituted 2H-benzimidazoles to 1Hbenzimidazoles, 991-8

## THERMAL REARRANGEMENT

- Thermally induced rearrangement of thiopheniobis(alkoxycarbonyl)methanides, 803-8
- Thermally induced rearrangement of
- thiopheniobis(alkoxycarbonyl)methanides. A theoretical MNDO SCF-MO study, 809-12 Photochemistry of 5-methylpyrimidin-4-ones in acetic acid solution:
- thermal rearrangements of Dewar pyrimidinones and 4-acetoxyazetidin-2-ones, 2653-62

### THERMOACTINOMYCES VULGARIS

- Thermorubin biosynthesis: evidence for the involvement of both salicylic acid and an undecaketide, 1865-8
- THERMOLYSIS
- Retrodienic reactions. Part 2. Vinyl- and propenyl-phosphines: synthesis by flash vacuum thermolysis and characterization, 99-104
- Thermolysis of polyazapentadienes. Part 8. The formation of pyrroles from 1,1-dialkyl-5-aryl-1,5-diazapentadienes, 333-8 Thermolysis of polyazapentadienes. Part 9. Gas phase thermolyses
- of some dienamines, enaminones, and enaminothiones, 339-42 Reaction of benzonitrile N-(p-nitrophenyl)imide with 5-substituted
- tetrazoles: a new route to substituted 1,2,4-triazoles via N hydrazonoyltetrazoles, 1587-92 Intermolecular thermal reaction of arylnitrenes with furans, 1859-
- 64
- Thermal decomposition of some allyl methoxyarenesulphinates, 1957-60
- Benzylic azide functionalization of tautomeric o-acyl-benzoic acid. -benzamide, and -nicotinic acid derivatives, and thermal decomposition of the derived azides, 2149-54
- Thermolysis and photolysis of 1-anilino-2-methyl-4,6diphenylpyridinium tetrafluoroborate in arene-trifluoroacetic acid mixtures: a novel route to singlet and triplet phenylnitrenium ions, 2277-82
- Thermal fragmentation of 2-azidobenzo[b]thiophene in the presence of alkenes: a new synthetic route to 1-(2-benzo[b thienyl)aziridines and/or thiochromans-4-carbonitriles, 3375-80

### THERMÓRUBIN

Thermorubin biosynthesis: evidence for the involvement of both salicylic acid and an undecaketide, 1865-8

### THERMOSALIENT SOLID

The allyl group for protection in carbohydrate chemistry. Part 21.  $(\pm)$ -1,2:5,6- and  $(\pm)$ -1,2:3,4-di-O-isopropylidene-myo-inositol. The unusual behaviour of crystals of  $(\pm)$ -3,4-di-O-acetyl-1,2,5,6-

#### THIA-ANTHRACENE

- Syntheses and reactions of 9-substituted 10-phenylthioxanthenium salts: negative evidence for thia-anthracene oligomerisation, 209-18
- THIADIAZINE

Cycloadditions of 3H-indoles, 451-6

- Reactivity of malononitrile towards sulphamide and N-substituted sulphamides: synthesis and hydrolysis reactions of 3,5-diamino-1,2,6-thiadiazine 1,1-dioxides, 1271-6
- THIADIAZOLE
  - Reaction of benzyne with 1,2,5-thiadiazoles and 2,1benzisothiazoles, 2141-4

Reactions of thionyl chloride with C-methyl heterocycles. Part 1. The formation of dichloro(2-quinolyl)methanesulphenyl chlorides from 2-methylquinolines, 3019–24

- THIAMINE
- Purines, pyrimidines, and imidazoles. Part 64. Alkylation and acylation of some aminoimidazoles related to intermediates in purine nucleotide de novo and thiamine biosynthesis, 2541-6 THIÀNAPHTHALENE
- Stable 2-thianaphthalenes: synthesis and reactions with electrophiles, 1885-96
- THIATHROMBOXANE
  - Synthetic approaches to the thiathromboxanes. Part 1. Preparation
  - of functionalised dihydrothiopyrans, 663–74 Synthetic approaches to thiathromboxanes. Part 2. Synthesis of structural isomers of thiathromboxane A<sub>2</sub>, 675-80
- THIAZINE
  - Allenes. Part 48. A new general method for the synthesis of dihydro-4H-1,4-thiazines, 1759-64

#### THIAZOCINE

Compounds with bridgehead nitrogen. Part 54. The stereochemistry of some derivatives of perhydrothiazolo[3,4-a]pyridine and the synthesis of 9-methylperhydro-3,8-methano-1,3-thiazocines, 1173-

#### THIAZOLE

Photochemical and thermal reactions of heterocycles. Part 5. Products via transient quasiantiaromatic azetine intermediates generated by desulphurisation of photochemical intermediates from a thiazolium-4-olate and 4-aminothiazolium salts, 189-92 Spectrometric and chemical studies of 5-acyl- and 5-nitroso-2-(N,N-

- disubstituted amino)thiazoles, 2209-12
- THIAZOLIDINE

Studies related to penicillins. Part 24. A novel thiazolidine ring enlargement of penam dioxides, 1765–72 THIAZOLOPYRIDINE

Compounds with bridgehead nitrogen. Part 54. The stereochemistry of some derivatives of perhydrothiazolo[3,4-a]pyridine and the synthesis of 9-methylperhydro-3,8-methano-1,3-thiazocines, 1173-

#### THIENAMYCIN

Isoxazole-oxazole conversion by Beckmann rearrangement, 1875-80

#### THIENOAZEPINE

Synthesis of novel 2,3-dihydro-8H-thieno[2,3-d]azepines and 1,2,3,4-tetrahydro-1H-3-benzazepines via photolyses of 6-azido-2,3-dihydrobenzo[b]thiophene and 6-azido-1,2,3,4tetrahydronaphthalene, 1933-8

#### THIETANONE

Studies related to penicillins. Part 26. Conversion of potassium benzylpenicillinate into 1-substituted derivatives of 3phenylacetamidoazetidine-2,4-dione, 2813-20

## THIÒACÈTAL

- Reactions of metallated 1,3-dithianes with carboxylic acid derivatives, 269-76
- Thionation reactions of diacylketene thioacetals with the Lawesson reagent and analogues, 2085–90 THIOAMIDE

- Photoreactions of indoline-2-thiones with cyanoalkenes, 1663-
- Reactions of thionyl chloride with C-methyl heterocycles. Part 1. The formation of dichloro(2-quinolyl)methanesulphenyl chlorides from 2-methylquinolines, 3019-24
- Reactions of thionyl chloride with C-methyl heterocycles. Part 2. The formation of [1,2]dithiolo[3,4-c]quinolin-1-ones and bis[dichloro(4-quinolyl)methyl]trisulphanes from 4methylquinolines, 3025-8

#### J. CHEM. SOC. PERKIN TRANS. I SUBJECT INDEX 1988

#### THIOANISOLE

- The reaction of alkyl-substituted thioanisoles with PCl<sub>3</sub> and AlCl<sub>3</sub>: a route to [1,2,3]benzothiadiphospholo[2,3-b]
- [1,2,3]benzothiadiphosphole derivatives, 3281–4 THIOAZETIDINONE—PENICILLIN
- Studies related to penicillins. Part 25. Synthesis of N-phenylacetyl and N-triphenylmethyl derivatives of 6-aminopenam 1-oxides, 259-70
- THIOCARBONYL
- Synthesis and photolysis of 4-thioxoazetidin-2-ones, 1353–6 THIOCHROMAN
- Thermal fragmentation of 2-azidobenzo[b]thiophene in the presence of alkenes: a new synthetic route to 1-(2-benzo[b]-thienyl)aziridines and/or

  - thiochromans-4-carbonitriles, 3375-80

## THIOCHROMONE

- Reactions of 3-bromo-2,3-dihydro- and 2,3-dibromo-4H-1benzothiopyran-4-one 1,1-dioxides with various amines, 1829-
- THIODISACCHARIDE
  - Synthesis of thiodisaccharides using phase-transfer catalysis, 3297-300

THIOESTER

Thioesters of amino acid derivatives as thioacylating agents in thiopeptide synthesis, 1051-6

## THIOIMIDE

- A new synthesis of  $\beta$ -lactams via photochemical  $\gamma$ -hydrogen abstraction of monothioimides, 2203-8 THIOISOSUCROSE
- - Synthesis of thiodisaccharides using phase-transfer catalysis, 3297-300
- **THIOKETONE** 
  - Chemistry of silyl thicketones. Part 4. 2,4,6-Triaryl-2,4,6tris(trimethylsilyl)-1,3,5-trithianes from silyl thioketones: crystal structure of 2,4,6-triphenyl-2,4,6-tris(trimethylsilyl)-1,3,5-
  - trithiane and stereochemistry of desilylation with fluoride ion, 1499-502

## THIONATION

- Thionation reactions of diacylketene thioacetals with the Lawesson reagent and analogues, 2085-90
- THIOPĚPTIDE
- Thioesters of amino acid derivatives as thioacylating agents in thiopeptide synthesis, 1051-6 THIOPHENE

- Thermally induced rearrangement of
- thiopheniobis(alkoxycarbonyl)methanides, 803-8 Thermally induced rearrangement of
- thiopheniobis(alkoxycarbonyl)methanides. A theoretical MNDO SCF-MO study, 809-12
- Synthesis of some thiophenium bis(t-butoxycarbonyl)methylides, 1023-8
- THIOPYRAN
  - Synthetic approaches to the thiathromboxanes. Part 1. Preparation of functionalised dihydrothiopyrans, 663-74
  - Synthetic approaches to thiathromboxanes. Part 2. Synthesis of structural isomers of thiathromboxane A2, 675-80 Thermally induced rearrangement of
  - thiopheniobis(alkoxycarbonyl)methanides, 803-8
  - Thermally induced rearrangement of
- thiopheniobis(alkoxycarbonyl)methanides. A theoretical MNDO SCF-MO study, 809–12 THIOPYRANOFURAN
- Synthetic approaches to the thiathromboxanes. Part 1. Preparation of functionalised dihydrothiopyrans, 663–74 THIOPYROPHOSPHATE
- Reaction of oxophosphorane-sulphenyl and -selenenyl chlorides with dialkyl trimethylsilyl phosphites. Novel synthesis of compounds containing a sulphur or selenium bridge between two phosphoryl centres, 2197–202 THIOUREA
- The mechanism of two reactions leading to isomeric 2-(N,Ndisubstituted amino)thiazol-5-yl ketones, 2213-8
- THIOXANTHENE
  - Syntheses and reactions of 9-substituted 10-phenylthioxanthenium salts: negative evidence for thia-anthracene oligomerisation, 1209 - 18
  - Thermal interconversion and cyclisation reactions of 2-(arylthio)benzyl radicals and 2-(benzyl)thiophenoxyl radicals, 2875-80

Stereo-structures of reaction products of thymidine epoxides with amines and L-amino acid ethyl esters, 2555-62 Stereochemical features of the anomerizations in the 5,6dihydrothymine nucleoside series, 2681-6 THYMİNE Stereochemical features of the anomerizations in the 5,6-

thujone and of (-)-carvotanacetone, and the stereochemistry and

The chemistry of terpenes. Part 27. The halogenation of (+)-

mechanism of formation of 'tribromothujone', 1527-36

- dihydrothymine nucleoside series, 2681-6 THYROID HORMONE
  - Synthesis of thyroid hormone analogues. Part 1. Preparation of 3'heteroarylmethyl-3,5-di-iodo-L-thyronines via phenoldinitrophenol condensation and relationships between structure and selective thyromimetic activity, 3085-96
  - Synthesis of thyroid hormone analogues. Part 2. Oxidative coupling approach to SK&F L-94901, 3097-102
  - Synthesis of thyroid hormone analogues. Part 3. Iodonium salt approaches to SK&F L-94901, 3103-12
- THYROMIMETIC

THUJONE

THYMIDINE

- Synthesis of thyroid hormone analogues. Part 1. Preparation of 3'heteroarylmethyl-3,5-di-iodo-L-thyronines via phenol dinitrophenol condensation and relationships between structure and selective thyromimetic activity, 3085–96
- Synthesis of thyroid hormone analogues. Part 2. Oxidative coupling approach to SK&F L-94901, 3097-102
- Synthesis of thyroid hormone analogues. Part 3. Iodonium salt approaches to SK&F L-94901, 3103-12
- A novel, simple method for the preparation of hindered diphenyl ethers, 3229-32

#### THYRONINE

- Synthesis of thyroid hormone analogues. Part 1. Preparation of 3'heteroarylmethyl-3,5-di-iodo-L-thyronines via phenoldinitrophenol condensation and relationships between structure and selective thyromimetic activity, 3085-96
- Synthesis of thyroid hormone analogues. Part 2. Oxidative coupling approach to SK&F L-94901, 3097-102
- Synthesis of thyroid hormone analogues. Part 3. Iodonium salt approaches to SK&F L-94901, 3103-12 TIN
- The  $\alpha$ -vinylation of  $\beta$ -dicarbonyl compounds by alk-1-enyl-lead triacetates, 2847-54
- TITANIUM
  - Titanium as a regio- and stereo-selective control element in the reaction of  $\alpha$ -alkoxyallylic phosphine oxide anions with carbonyl compounds, 1039-46
  - Magnesium- and titanium-induced reductive coupling of carbonyl compounds: efficient syntheses of pinacols and alkenes, 1729-

## TOLUENE SULPHINAMIDE

Syntheses and reactions of optically active alkyltoluene-psulphinamides. Part 2. Substitution at sulphur with retention of configuration, 1695–8 TRACHYLOBAGIBBERELLIN

Partial synthesis of 4-epi-trachylobagibberellin A12, 1513-

### TRANSANNULAR CYCLIZATION

Structure-reactivity relationships in normal and 19-nor-5,10-secosteroidal cyclodecenone systems. Part 1. Acid-catalyzed and thermal reactions, 1495-8

#### TRIALKYLSTIBINE

 $\beta$ -Hydroxy ketones from the iodine-catalysed reaction of  $\alpha$ -bromo ketone with aldehydes mediated by trialkylstibine, 2855-60 **TRIAZINE** 

Cycloadditions of 3H-indoles, 451-6

Preparation of N,O-aminals as synthetic equivalents of H<sub>2</sub>C=NAr and (H<sub>2</sub>C=NHAr)<sup>+</sup> ions: neutral- and acid-promoted transformations, 1631--6

Photochemistry of N-heterocycles. Part 1. Synthesis and photochemistry of some 2(4),5-dihydro-1,2,4-triazines. X-Ray molecular structure of 1-(4-methyl-3,5,6-triphenyl-1,4,5,6tetrahydro-1,2,4-triazin-6-yl)ethanol, 3267-74

TRIAZOLE

- Reaction of benzonitrile N-(p-nitrophenyl)imide with 5-substituted tetrazoles: a new route to substituted 1,2,4-triazoles via Nhydrazonoyltetrazoles, 1587-92
- Synthesis of nucleosides using ketene dithioacetals, 2309-14

#### TRIAZOLE

- The reactions of hydrazones and related compounds with strong bases. Part 4. 4,5-Diaryl-1,2,3-triazoles from aromatic aldehyde azines and from the reaction of arenecarbonitriles with aryldiazomethanes, 2917-20
- 1,3-Dipolar cycloadditions of 1-(N-arylidene)amino-1,2,3-triazoles with diphenylnitrilimine, 3233-8

## TRIAZOLÓPYŘIMIDINE

Synthesis, molecular structure, and reactions of 1H-1,2,4triazolo[4,3-*a*]pyrimidinium betaines, 351-8 TRIAZOLYLALKANE

Cyclization of isothiosemicarbazones. Part 8. Formation and structure of gem-bis(3-alkylthio-1H-1,2,4-triazol-1-yl)alkanes and

# related compounds, 1897–904 TRIBOLIUM CASTANEUM

Bakers' yeast mediated preparation of (S)-3-(2-furyl)-2methylpropan-1-ol, a bifunctional chiral C<sub>5</sub> isoprenoid synthon: synthesis of (4R, 8R)-4,8-dimethyldecanal, a pheromone of

# Tribolium castaneum, 3061–6 TRICARBONYLCHROMIUM COMPLEX

- Tetrahydroisoquinolines. Part 4. Enantioselective conversion of (+)-amphetamine into (+)-(1R,3S,4S)- and (-)-(1S,3S,4R)-1,2,3,4-tetramethyl-1,2,3,4-tetrahydroisoquinoline via
- tricarbonyl(arene)chromium methodology, 1481-8

## TRICARBONYLIRON

Nucleophilic addition to tricarbonyliron complexes of  $\alpha$ , $\beta$ unsaturated ketones and the production of 1,4-diketones, 2091-

## TRICHLOROISOCYANURIC ACID

10β-Chloro-17β-hydroxyestra-1,4-dien-3-one and its related compounds, 457-60

## TRICHOSANTHES KIRILOWII

Karounidiol [D:C-friedo-Oleana-7,9(11)-diene-3a,29-diol] and its 3o-benzoate: novel pentacyclic triterpenes from Trichosanthes kirilowii. X-Ray molecular structure of karounidiol diacetate, 439-44

#### TRICYCLOUNDECANE

- Enantioselective synthesis of the tricyclo[5.2.2.0<sup>1,5</sup>]undecane skeleton using aprotic Michael-additions; formal total synthesis of (+)-isoeremolactone, 373-8
- Stereocontrolled synthesis of the CDF part of Aconitum alkaloids via intramolecular double Michael reaction, 1155-64

### TRIDACHIONE

- Transition-metal mediated asymmetric synthesis. Part 6.
- Organometallic approaches to the enantiomer synthesis of tridachione: a role for planar chirality in synthesis design, 2069-74

## TRIENOLATE

Unsaturated carboxylic acid polyenolates. Lithium trienolate of sorbic acid as a d<sup>6</sup> synthon: addition to ketones and unsaturated ketones, 2797-804

## TRIFLUOROACETIC ACID

Reaction of phenylnitrenium ion with sulphides. A novel synthetic method for aminophenyl sulphide derivatives, 521-8

Thermolysis and photolysis of 1-anilino-2-methyl-4,6diphenylpyridinium tetrafluoroborate in arene-trifluoroacetic acid mixtures: a novel route to singlet and triplet phenylnitrenium ions, 2277-82

#### TRIFLUÓROMETHANÉSULPHONIC ACID

- Reaction of phenylnitrenium ion with sulphides. A novel synthetic method for aminophenyl sulphide derivatives, 521-8
- TRIKENTRIORHODIN
- Carotenoids and related compounds. Part 40. Synthesis of trikentriorhodin and other  $\beta$ -diketones, 1371-82

## TRIOXADISPIROPENTADECANE

- Chemistry of bis-spiroacetals. Synthesis of the 1,6,8-
- trioxadispiro[4.1.5.3]pentadecane ring system, 125-32 TRIOXOLANE
- Photosensitized oxidation of furans. Part 13. Trapping reactions of the carbonyl oxides obtained from some 2-methoxy-5-phenylfurans, 1699-704 **TRIPHENYLMETHANE DYE**

Triphenylmethane dye ethynologues with absorption bands in the near infrared. 3155-62

TRISULPHANE

Reactions of thionyl chloride with C-methyl heterocycles. Part 2. The formation of [1,2]dithiolo[3,4-c]quinolin-1-ones and bis[dichloro(4-quinolyl)methyl]trisulphanes from 4methylquinolines, 3025-8

#### TRITHIANE

- Chemistry of silyl thioketones. Part 4. 2,4,6-Triaryl-2,4,6tris(trimethylsilyl)-1,3,5-trithianes from silyl thioketones: crystal structure of 2,4,6-triphenyl-2,4,6-tris(trimethylsilyl)-1,3,5-trithiane and stereochemistry of desilylation with fluoride ion, 1499-502 TRITHIATRIAZEPINĚ
- Organic heterocyclothiazenes. Part 7. Chemistry of 1,3,5,2,4,6trithiatriazepines, 1745-8

### TRYPTAMINE

- Synthesis and characterization of crowned 1,4-benzoquinones as ionophore-dienophile (redox) combined systems: double interaction with catecholamines and tryptamine, 511-20
- TRYPTOPHAN

Preparation and <sup>11</sup>C-labelling of a substance P analogue containing D-tryptophan in positions 7 and 9, 497–502

#### ULLMAN CONDENSATION

The synthesis of di- and tri-arylamines through halogen displacement by base-activated arylamines: comparison with the Ullmann condensation, 1331-6

#### URACIL

- Studies of pyrimidine-2,4-diones: synthesis of novel condensed pyrido[2,3-d]pyrimidines via intramolecular cycloadditions, 607-
- Fluorination of pyrimidines. Part 2. Mechanistic aspects of the reaction of acetyl hypofluorite with uracil and cytosine derivatives, 1203-8
- Nucleosides. Part 6. New chemical modification of the ribosyl moiety in uridines; synthesis of 2,2'-anhydro-1-[5-deoxy-5 (substituted thio)-β-D-arabinofuranosyl]uracil derivatives and their conversion into 3',5'-epithiopyrimidine nucleosides, 2233-42
- Reaction of acetyl hypofluorite with pyrimidines. Part 3. Synthesis, stereochemistry, and properties of 5-fluoro-5,6-dihydropyrimidine nucleosides, 2547-54
- Syntheses and alkaline hydrolyses of 2,2'-imino- and 2,2-(substituted imino)-1-(2'-deoxy- $\beta$ -D-arabinofuranosyl)uracils, 2955-62

#### URIDINE

- Nucleosides. Part 5. Isolation and characterization of the stable cyclic adducts, (5R,6S)- and (5S,6S)-bromo-O<sup>6</sup>,5'-cyclo-5,6dihydrouridines in the bromination of 2',3'-Oisopropylideneuridine with N-bromosuccinimide, 2227-32
- Nucleosides. Part 6. New chemical modification of the ribosyl moiety in uridines; synthesis of 2,2'-anhydro-1-[5-deoxy-5 (substituted thio)-B-D-arabinofuranosyl]uracil derivatives and their conversion into 3',5'-epithiopyrimidine nucleosides, 2233–42

## VALIDAMYCIN

Synthetic studies on antibiotic validamycins. Part 12. Total synthesis of (+)-validamycin B and (+)-validoxylamine B, 2675-80

## VALIDOXYLAMINE

- Synthetic studies on antibiotic validamycins. Part 12. Total synthesis of (+)-validamycin B and (+)-validoxylamine B, 2675-80
- VALINE
- Regioselective chlorination of valine derivatives, 259-64 VANCOMYCIN
  - Structure elucidation of a glycopeptide antibiotic, OA-7653, 1949-56
- VINAMIDINE

Thermolysis of polyazapentadienes. Part 8. The formation of pyrroles from 1,1-dialkyl-5-aryl-1,5-diazapentadienes, 333-8 VINŸLATION

- The α-vinylation of β-dicarbonyl compounds by alk-1-enyl-lead triacetates, 2847-54
- VINYL ETHER

Stereospecific synthesis of squalenoid epoxide vinyl ethers as inhibitors of 2,3-oxidosqualene cyclase, 461–70 VINYLOGOUS WOLFF REARRANGEMENT

Vinylogous Wolff rearrangement of cyclic  $\beta$ ,  $\gamma$ -unsaturated diazomethyl ketones: a new synthetic method for angularly functionalised polycyclic systems, 939-44

- VINYLSERINE
  - Structural studies on bioactive compounds. Part 7. The design and synthesis of a-substituted serines as prospective inhibitors of serine hydroxymethyltransferase, 2903-4
- VITAMIN B<sub>12</sub>
  - Synthetic studies relevant to biosynthetic research on vitamin B<sub>1</sub> Part 6. Synthesis of chlorins by a photochemical approach, 1557-

## VITAMIN B<sub>12</sub>

- Synthetic studies relevant to biosynthetic research on vitamin  $B_{12}$ . Part 7. Synthesis of  $(\pm)$ -bonellin dimethyl ester, 1569–76
- Synthetic studies relevant to biosynthetic research on vitamin  $B_{12}$ . Part 8. Synthesis of  $(\pm)$ -Faktor-I octamethyl ester, 1577-86 WATER CO-ORDINATION

- Both-faces hindered porphyrins. Part 5. Synthesis and characterization of iron(iii) basket handle porphyrins having multiple secondary amide groups inserted in the superstructures,
- WICHTERLE ANNELATION
- Synthetic studies on terpenoid compounds. Part 14. Total synthesis of pyroangolensolide, 445-50
- WITTIG REACTION
  - Stereoselective cyclizations of unsaturated esters derived from 2,3-O-isopropylidene-D-ribose, 433-8
- Stereospecific synthesis of squalenoid epoxide vinyl ethers as inhibitors of 2,3-oxidosqualene cyclase, 461–70 WOLFF REARRANGEMENT

Vinylogous Wolff rearrangement of cyclic β, γ-unsaturated diazomethyl ketones: a new synthetic method for angularly functionalised polycyclic systems, 939-44

#### XANTHOCERCIŃ

- Oligomeric isoflavonoids. Part 2. Structure and synthesis of xanthocercin A and B, the first isoflavono-lignoids, 1237-42 XANTHYLIUM SALT
- Reactivities of heteroaromatic cations containing a Group VIB element in nucleophilic reactions. Reactions of 9-phenylxanthylium, thioxanthylium, and -selenoxanthylium salts with amines, sodium phenolate, and sodium benzenethiolate, 2271-6

### YLANGENE

Studies on a new route to  $(\pm)$ -copaene and  $(\pm)$ -ylangene, 3223-8

#### YLIDE

- Oxo-phospholes from the alkoxyphosphonium ylides formed in the reaction of trialkyl phosphites or dialkyl phosphonites with dimethyl acetylenedicarboxylate, 175-8
- Thermally induced rearrangement of
- thiopheniobis(alkoxycarbonyl)methanides, 803-8 X=Y-ZH systems as potential 1,3-dipoles. Part 10. The decarboxylative route to azomethine ylides. Background and
- relevance to pyridoxal decarboxylases, 949-56 Synthesis of some thiophenium bis(t-butoxycarbonyl)methylides,
- 1023-8
- Stable 2-thianaphthalenes: synthesis and reactions with electrophiles, 1885-96
- An investigation of potential [2,3]-sigmatropic rearrangements of pentafluorophenyl-aza-, -thio-, and -methylene-sulphonium ylides, 2023-6
- X=Y-ZH Systems as potential 1,3-dipoles. Part 11. Stereochemistry of 1,3-dipoles generated by the decarboxylative route to azomethine ylides, 2693-702
- X=Y-ZH Systems as potential 1,3-dipoles. Part 12. Mechanism of formation of azomethine ylides via the decarboxylative route from x-amino acids, 2703-14

YOHIMBINE

- Photocyclisation of enamides. Part 27. Total syntheses of  $(\pm)$ yohimbine ( $\pm$ )-alloyohimbine, and ( $\pm$ )-19,20didehydroyohimbines, 2219-26
- YUEHCHUKÉNE
- Antifertility agents: a synthetic entry to yuehchukene analogues; stereoselective synthesis of 7,7-bis-nor-yuehchukene via 9methyl-6-oxo-6aβ-7,8,10aβ-tetrahydroindeno[2,1-b]indole, 3317-22