

## INDEX

- ABH secretor, 141  
 absorption curve, 225, 236  
 acriflavine, 72  
 adaptation, 135, 530  
*Adoxa*, 111  
 aging, cytoplasmic, 85  
 albinism, 165  
 allele, multiple, 219, 233 *sqq.*, 289 *sqq.*,  
     519 *sqq.*  
     pseudo-, 278, 303 *sqq.*  
     thermo-sensitive, 168  
 alpha-amino-n-butyric acid, 77  
 Anderson, G. E., 411  
 Anderson, V. E., 270  
 ancurin, 76  
 animal improvement, 409  
 anther dehiscence, 130  
 antibody, 531  
*Anthoxanthum*, 114  
*Arabidopsis*, 35  
 arginine, 76  
 Arnold, H., 533-537  
 artificial insemination, 533  
 ascospore, 502 *sqq.*  
     fragility, 4  
     maturation, 3, 8  
     size, 1 *sqq.*  
*Aspergillus*, 67 *sqq.*, 287, 303, 415  
 asymmetry, 190, 412  
 Auerbach, C., 414  
 auxin, 45  
 auxotroph, 142  
  
 backcross, 9 *sqq.*, 24, 62, 150, 163  
 Barber, H. N., 33-60  
 basidiospore, 81  
 Bateman, A. J., 414  
 Baur, 138  
 Beadle, 287  
 Beaufoy, S., 365, 385  
 Bevan, E. A., 141-142  
 blood, groups, 115, 415, 432, 531 *sqq.*  
     Lewis, 141  
     plasma, 141  
 Boam, T. B., 205  
 Bodmer, W. F., 145, 159, 487-498  
 bodyweight, 169, 188  
 Bonner, J. T., 529  
*Bouteloua*, 388  
*Brassica*, 43  
 buffering system, 44  
 Burt, Sir C., 537-538  
 Butler, J. A. V., 530-531  
  
 Callan, H. G., 143  
*Campanula*, 116  
 canalisation, 133  
  
 cancer, 529 *sqq.*  
     human, 270  
 cat, Siamese, 168  
 Catcheside, D. G., 403  
 cattle, 413  
 causation theory, 137  
 centromere, 110  
 centrosome, 84  
*Cepaea*, 261  
 chaeta number, 188 *sqq.*, 205 *sqq.*, 413  
 Chesser, E., 537-538  
 chiasma frequency, 415  
     localisation, 30, 90  
 chickens, 409  
*Chippewa*, 406  
 chromatid, narrow, 89  
     segregation, 405  
 chromatography, 505  
 chromosome, breakage, 83  
     bridge, 83, 111  
     coiling, 94 *sqq.*  
     complement, *Trillium*, 92 *sqq.*  
     *Drosophila*, 209 *sqq.*  
     evolution, 109 *sqq.*  
     H-segments, 97 *sqq.*  
     inversion, 305  
     iso-, 113  
     lampbrush, 143  
     loops, 143  
     map, 25, 67  
     non-disjunction, 79, 403 *sqq.*  
     pairing, non-homologous, 311  
     salivary, 243  
     sex, 154  
     size, 95  
     subterminal, 90  
     supernumerary, 90, 112 *sqq.*  
     telocentric, 90, 113  
 clamydospore, 84  
 cline, 481, 484  
 clone, 440 *sqq.*  
 clover, 338  
 Cock, A. G., 414  
 colchicine, 95  
 colonisation, 261  
 colyanthin, 34 *sqq.*, 55, 56  
 competition, 159, 161, 261, 393 *sqq.*  
 confounding technique, 146, 159  
 Cooper, J. P., 317-340, 445-479  
*Coprinus*, 81 *sqq.*, 411  
 corpus luteum, 341 *sqq.*  
 cotton, 249  
 Creed, E. R., 363-391  
 creode, 134  
 Crosby, J. L., 127-131, 412  
 cross, diallel, 142  
     reciprocal, 14 *sqq.*, 62, 82, 84

- cross-over, 23 *sqg.*, 182, 227, 245, 305 *sqg.*  
   double, 28  
   suppressors, 23 *sqg.*  
*Cruciferae*, 43  
 cytoplasm, 140  
 cytoplasmic, effects, 85  
   control, 525 *sqg.*  
   responses, 189  
   transfer, 499
- Darlington, C. D., 89-121 ; 139-140  
 Darwin, C., 138, 537  
 Darwin, E., 537  
 Darwinism, 139, 530  
*Daucus*, 35  
 Davidson, W. M., 531-533  
 Davis, P. E., 481-486  
 Dawson, G. W. P., 416  
 Day, P. R., 81-87, 412  
 deafness, 142  
*Delphinium*, 416  
 deoxyribonucleic acid, 89, 143, 415, 531  
 development, concepts of, 133 *sqg.*, 140  
   defective, 167  
   evolution of, 529  
 dicaryon, 81  
 Dickinson, A. G., 413  
*Dictostelium*, 529  
 disease resistance, 269  
 dominance, 9, 273 *sqg.*, 445 *sqg.*  
 Dowdeswell, W. H., 363-391  
*Drosophila*, 18, 23, 110, 115, 140, 143, 154,  
   163, 188, 219, 233, 243, 273 *sqg.*, 287,  
   303 *sqg.*, 350, 393, 412 *sqg.*, 533  
   *Guaramunu*, 243  
   *Robusta*, 246
- ear emergence, 318 *sqg.*  
 ecology, 135, 261, 271  
 Elliot, F. C., 269  
 Elliot, J. R., 34  
 embryology, 134  
 embryonic death, 26, 341 *sqg.*  
 endosperm, 93  
*Endymion*, 263  
 environment, fluctuating, 116  
 enzymes, 238  
*Epilobium*, 283  
 epistasis, 169, 173  
 equilibrium, chemical, 136  
 euchromatin, 95 *sqg.*  
 Eversley, D. F. C., 537  
 evolution, 19, 58, 99 *sqg.*, 114 *sqg.*, 136,  
   139, 411
- fertilisation, preferential, 114  
   self, 127 *sqg.*  
 fertility, 137, 142, 196, 537  
   self, *Aspergillus*, 8 *sqg.*  
*Festuca*, 114  
 Fisher, Sir R. A., 179, 281, 417  
 fitness, 135, 413
- florigen, 56  
 flower colour, cotton, 250  
 flowering, inhibitor, 34 *sqg.*  
   time, 143  
 Forbes, E., 67-80  
 Ford, E. B., 353-361, 363-385  
 Foreman, B., 353  
 Fraser, G. R., 142  
 Fraser, J. D. F., 364, 365  
 Fraser Roberts, J. A., 531-533  
 fungus, imperfect, 525 *sqg.*  
*Fritillaria*, 110, 111
- Galton, F., 537  
 Ganesan, A. T., 499-517  
 gene, action, 529  
   complementary, 505  
   dominant, 20  
   equilibrium, 519 *sqg.*  
   flow, 206, 530, 534  
   frequency, 485, 519 *sqg.*  
   function, 311  
   interaction, 200, 456  
   lethal, 311, 341 *sqg.*, 414  
   modifying, 18, 50, 51, 64, 65, 253, 258  
   polymeric, 501 *sqg.*  
   recessive, 23  
   strategy of, 133 *sqg.*  
   super, 115  
   suppressor, 144  
 genetic, assimilation, 135  
   flexibility, 187  
 genome, 411  
 gibberellic acid, 35  
 Glassman, E., 143  
*Godetia*, 112  
 goitre, 142  
*Cosyphium*, 249  
 grafting, 34, 36, 55  
 Green, M. M., 303-315  
 Grüneberg, H., 28
- H-segment, 89 *sqg.*  
 Haldane, J. B. S., 281  
 hamster, Syrian, 165  
 haploidisation, 67 *sqg.*  
 Haupt, W., 499-517  
 Hayashi, T., 531  
 heritability, 199, 445 *sqg.*  
 Herskowitz, I. H., 140  
 heterochromatin, 89 *sqg.*, 533  
   instability, 116  
 heterokaryon, 9, 71, 144, 414, 525 *sqg.*  
 heteroplasmon, 527  
 heterosis, 118, 415  
 heterothallism, 1  
 heterozygosis, 455  
 heterozygote deficiency, 105, 106  
 hexaploid, 52  
 histogenesis, 133  
 homeorhesis, 134  
 homeostasis, developmental, 50  
   genetic, 50, 134, 409

- homothallism, 9  
 hormone, flowering, 33 *sqq.*, 55  
 Howard, H. W., 416  
 Howland, A. K., 61-65  
 Hutt, F. B., 269  
 Huxley, J., 529, 530  
*Hyoscyamus*, 35
- inbreeding, 137, 138, 179, 409, 478  
   depression, 317 *sqq.*, 415, 453, 458  
 individuality, 200  
 indoleacetic acid, 35  
 infection, 140  
 inheritance, non-Mendelian, 525  
 interaction, 149, 151, 158, 160  
   genic, 142  
   genotype-environment, 413, 456, 470  
   maternal-fetal, 415  
 internode, length, 36, 46 *sqq.*  
 inversion, 213 *sqq.*  
   heterozygote, 107  
 irradiation, 31, 142, 305, 341, 411, 414  
 isolation, 205  
   barriers, 215  
   genetic, 115
- Jacobi's theorem, 295, 298  
 Jinks, J. L., 525-528  
 junction theory, 179
- Kalanchoe*, 35  
 Koch, G., 417 *sqq.*
- Lachenalia*, 111  
 Lagrange, 293  
*Lapsana*, 35  
 Lawler, S. D., 141  
 Lehmann, H., 141  
 Lerner, I. M., 409  
 lethal, balanced, 24, 30  
 leucine, 77  
 Levintan, M., 243  
 likelihood, 483  
*Lilium*, 114  
 linkage, 24, 61 *sqq.*, 243 *sqq.*, 393 *sqq.*,  
   487 *sqq.*  
   groups, *Aspergillus*, 67 *sqq.*  
   multiple, 145 *sqq.*  
   sex, 174, 176, 413, 414  
   tests, 145, 157  
*Lolium*, 317 *sqq.*, 445 *sqq.*  
 Lyon, M. F., 23-32, 341-352  
 lysosome, 531
- Malthusian parameter, 163  
 Mandel, S. P. H., 289-302, 519-524  
*Maniola*, 353 *sqq.*, 363 *sqq.*  
 map-distance, 69, 78  
 Marquardt, H., 139  
 Mason, J. I., 417-444  
 maternal effect, 143, 413
- Mather, K., 138  
 mating, assortative, 412, 450, 453  
   parent-offspring, 179 *sqq.*  
   random, 450  
 maturity, 413, 414  
 Mayr, E., 530  
 McWhirter, K. G., 353, 363-391  
 meiosis, 82, 263, 531  
 melibiose, 499 *sqq.*  
 Mendelism, 139  
*Mesocricetus*, 165  
 methionine, 73, 142  
 Michaelis, A., 139  
 micronucleus, 83  
 migration, 485, 534  
 mitochondria, 134, 531  
 mitosis, 95  
 morphogenesis, 133  
 morphology, cellular, 502, 506  
 mouse, 23 *sqq.*, 153, 163, 188  
   linkage group IX, 23  
   sex, 153, 162  
   *t*-allele, 23 *sqq.*  
 Müntzing, A., 138-139  
 mutants, *Drosophila*, 154, 219 *sqq.*  
   hamster, 165, 168  
   mouse, 153, 162, 163  
 mutation, 23, 24, 139, 141, 144, 283, 411,  
   414, 416, 526  
   back-, 310  
   load, 341  
   rate, 24, 30  
 mycelium, abnormal, 83  
*Mycena*, 81  
 myxomatosis, 385
- Neurospora*, 1 *sqq.*, 144, 287, 414  
*Nicotiana*, 457  
 Nilsson-Ehle, 138  
 Nolte, D. J., 219, 233, 273-281  
 nucleic acid, 35  
 nucleolus, 112
- O'Donald, P., 481-486  
*Oenothera*, 115, 138, 283  
 opossum, 341  
 ornithine, 74
- Paramecium*, 530  
*Paris*, 89 *sqq.*  
 Parsons, P. A., 145, 154, 393-402, 487-498  
*Parthenium*, 114  
 particles, subcellular, 531  
 Pateman, J. A., 1-21  
 Patston, V., 141  
 penetrance, 170, 485  
 perithecium, 2  
 phenocopy, 46  
 Phillips, R. J. S., 23-32  
*Phleum*, 114  
 photometry, 222, 235

- photoperiodism, 33 *sqq.*, 143, 318 *sqq.*  
 photosynthesis, 531  
 physiological genetics, 33 *sqq.*  
 pigmentation, melanic, 165, 169  
*Pisum*, 33 *sqq.*  
 plasmagene, 140  
 pleiotropy, 36, 50, 53 *sqq.*  
*Poa*, 112, 114  
 pollen mother cell, 263  
 pollination, open, 456  
 polygene, 11, 16  
 polygenic, control, 317, 445  
   inheritance, 409  
 polymorphism, 89, 205, 213, 415  
   allelic, 117  
   balanced, 289, 485  
   parallel, 89 *sqq.*  
   replicatory, 117  
 polyploidy, 411  
   selection of, 92  
 population, equilibrium, 409  
   structure, 317, 445-479  
 position effect, 220, 228  
*Primula*, 127, 412  
 Pritchard, R. H., 415  
*Psalliotia*, 81  
 pseudocholinesterase, 141  
*Puccinia*, 61 *sqq.*  
 Punnett, 139  
  
 rabbit, 385  
   Himalayan, 168  
 race, geographical, 534  
*Raphanus*, 43  
 reciprocal crosses, 14 *sqq.*, 62, 82, 84  
 reciprocal difference, 14 *sqq.*  
 recombination, 62, 153, 154, 161, 209 *sqq.*,  
   415, 487 *sqq.*, 535, 536  
   *Aspergillus*, 73  
   fraction, 159, 171, 174  
   frequency, 24, 30  
   mitotic, 67 *sqq.*  
   sex difference, 24, 25  
 Reeve, D., 533-537  
 Reeve, E. C. R., 412  
 regression, parent-offspring, 450  
 Reiger, R., 139  
 Reissig, J. L., 144  
 Renner, O., 138, 283-288  
 reversions, 411  
   vegetative, 42, 43  
 ribose nucleic acid, 144, 531  
 Riley, R., 411  
 Roberts, C., 499-517  
 Robertson, F. W., 413  
 Robertson Smith, D., 531-533  
 Robinson, R., 165  
*Roltboellia*, 143  
 Rowlands, D. G., 142  
 rust resistance, 61  
 Ryan, E., 141  
 ryegrass, perennial, 318 *sqq.*, 333 *sqq.*, 445  
  
*Saccharomyces*, 141, 287, 499-517  
*Salmonella*, 411  
 Salzano, F. M., 243  
*Samolus*, 35  
 Sankey, J., 271  
 Saunders, J. H., 249  
 Scheuer, P. A. G., 519-524  
*Secale*, 114  
 segregation, 527  
   bimodal, 46  
   cytoplasmic, 85  
   mitotic, 67 *sqq.*  
   polygenic, 11 *sqq.*  
   ratios, 499  
   simultaneous, 170  
 selection, 1 *sqq.*, 126, 135, 144, 200, 317 *sqq.*,  
   393, 409, 413, 445-479  
   centrifugal, 187  
   directional, 197  
   disruptive, 187 *sqq.*, 205, 412  
   intensity, 486  
   natural, 108  
   recombination, 109 *sqq.*  
   response, 2 *sqq.*  
   stabilising, 187, 190, 194, 196, 412  
 selective advantage, 19  
 selfing, 446 *sqq.*  
 sex, nuclear, 531-533  
   ratio, inversion, 115  
 Shaw, G. W., 89-121  
 sib-mating, 468  
 sickle-cell anæmia, 200  
*Silene*, 35, 144  
 Smith-Keary, P. F., 411  
 smoking habits, 417-444  
 snails, 261  
*Solanum*, 403 *sqq.*, 416  
 somatic conversion, 284 *sqq.*  
*Sorghum*, 114  
 speciation, 216  
 species, 530  
 Spencer, H., 537  
 spores, asexual, 525 *sqq.*  
 stability, developmental, 4 *sqq.*, 44, 409  
*Stercovavirus*, 481 *sqq.*  
 sterility, 90  
   male, 165  
   semi-, 26  
 Storey, H. H., 61-65  
 strawberry, 36  
 Strickland, 287  
 sucrose, 72  
 suppressor, 307 *sqq.*  
 survival, 44, 136  
  
 temperature, effects, 42, 224 *sqq.*, 263  
 Temple, Sir W., 537  
 tetrad, abnormal, 81 *sqq.*  
 tetraploid, 403 *sqq.*  
 Thoday, J. M., 134, 187 *sqq.*, 205, 412  
 threshold effect, 17  
 Todd, G. F., 417-444

- transformation, logarithmic, 157  
 translocation, 110  
     mouse, 23, 26  
*Trifolium*, 457  
*Trillium*, 89 *sqq.*  
 triploid, 92  
*Triticum*, 411  
 twins, human, 417 *sqq.*
- Umbelliferae*, 43  
 uracil, 141  
 uredospore, 61
- Van der Veen, J. H., 123-126  
 variance, analysis of, 488 *sqq.*  
 variation, 249  
     additive, 445 *sqq.*  
     clonal, 112  
     continuous, 138  
     cryptic, 118  
     cytoplasmic, 133  
     environmental, 13, 17, 33 *sqq.*  
     genetic, 445 *sqq.*  
         non-additive, 450  
     phenotypic, 37, 50  
     polygenic, 33  
     random, 135
- Venables, L. S. V., 486  
 vernalisation, 33 *sqq.*  
 Verscheur, F. von, 417  
 viability, 28, 63, 86, 145, 147, 154, 162, 163,  
     168 *sqq.*, 179, 291 *sqq.*, 393 *sqq.*, 414,  
     483, 488 *sqq.*, 519 *sqq.*  
*Vicia*, 33, 110, 142  
 virus, 140, 531
- Waddington, C. H., 133-136  
 Wallace, M. E., 153  
 Williams, G., 136-138  
 Williamson, M. H., 261  
 Wilson, J. Y., 263  
 Winge, Ø., 287, 513
- Xanthium*, 35, 36
- yeast, 35
- Zea*, 61, 114, 403 *sqq.*  
 Zorn, W., 533  
 zygote pairing, 415