

INDEX

- abnormal plant growth, 148
 ABO system, 52, 140, 152
Abraxas, 29
Accipiter, 13
 acentric, 399 *sqq.*
Acentropus, 17
Achillea, 32
Acridium, 27
Actinomycetes, 249
 adaptation, 153, 174, 269, 418
Aegilops, 132, 150
Aethionema, 65
Agropyron, 132
 albino, 291
 alleles, linear arrangement, 343
 para, 380
 allelic interaction, 223 *sqq.*, 318
 allelism, 34, 53, 69 *sqq.*, 279, 296, 325, 343,
 364, 374 *sqq.*
 Allison, D., 39, 40
Allium, 104, 117 *sqq.*, 249
Alopex, 14
 ambivalence, 25 *sqq.*
 Amphibians, 29
Anagallis, 3, 15
 anaemia, 26, 38, 281
 anaerobic culture, 143
Anarrichas, 52
 Anderson, 149
 Angiosperm, 53
Anthus trivialis, 8
 antibodies, 138, 316, 320
 antibiotics, 250
 antigens, blood, 137
Apis, 19
 apomixis, 63
Apotettix, 27
Arabis, 63
 Arachnida, 4
Argynnis paphia, 13
Ardea, 14
 arterial system, 289
 artificial breeding, 147
Arum, 32
Arvicole, 51
 Ascidians, 31
 Ascomycetes, 252, 289
 ascospore, 345 *sqq.*
 ascus, 373, 381
Aspergillus, 343 *sqq.*, 381
 asynapsis, 118, 119-120, 123
Atropa, 23
 Auerbach, C., 290
 autosome, 386
Avena sp., 149
 aviary, 326 *sqq.*
 back crossing, 259, 296 *sqq.*, 409, 413
 bacteriology, 144, 290
 balanced lethal, 293
 Bateman, A. J., 53, 152, 187, 415
 Bateman, N., 291
 Bateson, W., 1, 43, 144, 286
 Beale, G. H., 152, 284
 de Beer, G. R., 276
 beetles, 3
 Bell, G. D. H., 150
 biochemistry, 278
 biomathematics, 146
 biotic potential, 176
 birch, 327 *sqq.*
Biston betularia, 15, 323 *sqq.*
 blood groups, 27, 33, 52, 74, 135 *sqq.*, 278,
 280, 291
 body size, *Drosophila*, 183
 weight, *Drosophila*, 170
Bombyx, 385
Boraginaceae, 33
Bothriembryon, 17
 Boyd, 280
 Brachet, 147
Brassica, 57 *sqq.*
 breeding system, 113-114, 236, 293, 418
 technique, 150
 Brock, R. D., 199
Bromus, 103, 399
 Brown, 149
 Brown, A. G., 61
 Burnett, J. H., 23
 Buzzati-Traverso, A. A., 153

Calystegia, 33
 cancer, 37, 287
Capsella, 55, 62, 69, 75
Cardamine, 53
Carocala, 3
 cattle, 419
Caulanthus, 65
 Cavalli-Sforza, L. L., 249
 cell physiology, 147
 coenocyte, 104
 centimorgan, 376 *sqq.*
 centromere, 344, 357, 373, 385, 391, 400
Cepaea, 9, 28
Charmosyna, 14
 cherry, 19, 419
 chiasmata, 104, 107, 375
 frequency, 95, 107, 208, 385 *sqq.*
 localisation, 390, 396
 terminalisation, 399, 402
 Chi-square, 167, 266, 305, 334, 390, 413
 chicken, 291
 chimaeras, 1

- Chiton*, 3
Chlamydomonas reinhardi, 239 *sqq.*
Chorthippus, 210, 386, 403
 chromatid, 358, 373 *sqq.*, 385, 400, 404
 chromosome, 373, 377, 391
 balance, 119 *sqq.*
 behaviour, 93-116, 399
 breakage, 118-119, 123-126, 190, 199,
 210 *sqq.*, 343, 399 *sqq.*, 405, 406
 bridges, 97-100, 399 *sqq.*
 number, 129-134, 418
 in *Hymenocallis*, 129-134
 pairing, 369
 rearrangement, 246, 354
 size, 205
 segment, 343 *sqq.*, 381
 supernumerary, 386, 387
 theory, 1
 types, 153
 uncoiling, 96-97
Cladocera, 5
 cleistogamy, 20
 Cleveland, 145
Coccinella, 3
 Cock, A. G., 291
Coelenterata, 4
Coeraba flaveola, 14
 cold treatment, 79
Colias, 3
 colour, blindness, 41
 factors, 291
 compatibility, 53 *sqq.*, 417
 competition, intra-specific, 175
Compositae, 76, 293
 conidium, 344 *sqq.*, 381
Convolvulus, 33
 Cooper, J. P., 418
 copepods, 3
Cosmos, 69, 75
 cotton, 26
 Courtney-Pratt, 41
Crenicichla, 18
Crepis, 69, 75
Cricetus, 15
Crinia, 16
 crossing-over, 243, 279, 301, 346, 367,
 373 *sqq.*, 385, 404, 413, 414
 mitotic, 354 *sqq.*
 somatic, 385
 unequal, 351 *sqq.*, 382
 value, 381
 Crowe, L. K., 293-322
Cruciferae, 53, 76, 293, 415
Crustacea, 4, 30
 cryptomorphism, 6
 cryptic pattern, 323 *sqq.*
 cuckoo, 7
 cytology, 73, 249, 418
 cytoplasm, 114, 296 *sqq.*
 cytoplasmic, heredity, 285
 influence, 318
 mutation, 151
 cytoplasmic particle, 316
 Darlington, C. D., 29, 117-127, 151
 Darrow, 151
 Darwin, C., 153
 Darwinism, 274
Datura, 33
Daucus, 32
 Dawson, G. W. P., 409-412
Delphinium, 409 *sqq.*
 development, 164, 273, 290
 diallel crosses, 223 *sqq.*
Dianthus, 33
 dicotyledon, 4
 differentiation, 89, 122-123, 145
Digitalis, 23
 dioecy, 415
 diplo-chromosomes, 145
 disease resistance, 37, 149
 Dobzhansky, T., 280
 dominance, 69 *sqq.*, 223 *sqq.*, 261, 324, 325,
 373 *sqq.*, 411, 419
 dosage heterosis, 7
 Dowdeswell, W. H., 265
 Dowrick, 124
Draba, 65
 drift, 281
Drosophila, 11, 26, 27, 50, 132, 152, 153, 187,
 290, 343, 369, 382, 385 *sqq.*, 417
 pseudo-obscura, 247
 Duffy system, 138, 152
 dyschronisation, 122
 earwigs, 3
 Echinoderms, 4, 31, 47
 ecology, 265 *sqq.*, 335
 egg-number, 9
 egg plants, 229
 Elliott, C. G., 385-398
Empoasca, 26
 endosperm failure, 199
Endymion, 386 *sqq.*
 environmental variation, 5
 enzymes, 143, 147, 290
Epacris, 81
Ephestia, 25
 Ephrussi, B., 143
Epipactis, 18
Ericaceae, 82
 epistasis, 344
Erophila, 65
Euarctus, 29
Eubacteriales, 252
Eucalyptus, 32
Eupatoria, 32
Euphrasia, 33
 Evans, A. M., 417
 evolution, 1-52, 153, 182, 255, 274, 278,
 415, 418
 of incompatibility, 293
 extra-nuclear inheritance, 417
eyeless, 239 *sqq.*

- fecundity, 159, 275, 417
 Feldman, 146
Felis pardus, 29
 fertility, *Aspergillus*, 345 *sqq.*
 Drosophila, 163
 human, 35
 Oenothera, 303 *sqq.*
 seed, 87
 Theobroma cacao, 69 *sqq.*
 fermentation, 373
 Fisher, Sir R. A., 2, 26, 35, 274
 fitness, 153 *sqq.*
Flagellata, 145, 290
 flatfish, 50
Flata, 21
 flax, 233
 flower colour, 409
 Ford, E. B., 41, 135-142, 255, 265
Forficula, 3, 52
 formaldehyde, 290
 fossils, 153
 Frith, M. J., 29
Fritillaria, 32, 121, 390, 396
 Froud, M. D., 289
 Frydenberg, O., 353
Fulmarus, 24
 fungi, 4, 249
 Fyfe, J. L., 291
- Galeopsis*, 231
Gasteria, 75, 219
 Gastropoda, 3
 gene, action, 318, 406
 complementary, 381
 compound, 373 *sqq.*
 definitions, 343
 frequency, 154, 181, 419
 spread of, 340
 transformation, 354
 unstable, 409 *sqq.*
 genes, blood, 137
 incompatibility, 293
 lethal, 296 *sqq.*
 modifying, 298, 299
 genetic recombination, 174, 179
 genotypic control, 93-116
 germination, 298, 302
 Gerra, A., 249
 giant cells, 104
 glucose, 374
 Godley, E. J., 415
 Goodwins, I. R., 413-414
Gossypium, 382
 grafting, 417
 grasshoppers, 3, 27
 Griffith, D. J., 149
 Grigg effect, 349
 growth rate, 350
 substance, 313
Gymnorhina, 17
- Habrobracon*, 385
 Hadzi, J., 276
 Haque, Ashraf, 117-127
 Haldane, J. B. S., 278, 284
 haptene, 316, 320
 hardiness, 168
 Hardy, A. C., 275
Harmonia, 14
 Harris, 278
 Hartshorne, J. N., 239
 Haskell, G., 149
 Haskins, C. P., 18
Helianthemum, 10, 132
Helioporus, 17
Helix hortensis, 9
Hemerocallis, 75
Herpestes, 51
 heterochromatin, 217
Heterodera, 19, 150
 heterogeneity, 251
 heterokaryosis, 19, 289, 344 *sqq.*, 381
 heterosis, 11, 174, 223 *sqq.*
 heterostyly, 19
 heterozygosity, 223, 273, 293 *sqq.*, 324, 325,
 343, 374 *sqq.*, 411, 418
 residual, 399
 Hipparchia, 3
 Hirsch, 147
 Hogben, L., 36
 homeostasis, 273
Homo sapiens, 33, 132
 homozygote, structural, 403
 Horne, F. R., 57
 Howard, H. W., 150
 human, blood groups, 278, 280
 heredity, 282
 Huxley, Julian, 1-52, 274
Hyacinthus, 81, 102, 120 *sqq.*, 199, 386 *sqq.*
 hybrid, interspecific, 297
 hybridisation, 32
 hydrolysis, 374
- Iberis amara*, 53, 65
 identical twins, mice, 414
 ideogram, 149
 inbred lines, 93, 289, 291, 339
 inbreeding, 66, 274, 413, 415
 coefficient, 291
 incompatibility, 53 *sqq.*, 69 *sqq.*, 145, 284,
 291, 297, 415
 antigen, 315
 evolution of, 293 *sqq.*
 individuality, 287
 inhibition, time of, 62
Insecta, 4
 intercellular gradient, 89
 intercrossing, 73
 interference, 346, 367
 negative, 354 *sqq.*
 internode patterns, 149
 interspecific hybrids, 297, 309
 intra-haploid pairing, 99, 403

- inversions, 11, 354, 364, 403, 404
 inviability, 304, 306
 irradiation, 191, 217, 246
 isochromosomes, 10
 isolation, 263
- Jacksonia, 17
 Jennings, 154
 Jinks, J. L., 223
 Jones, K., 418
 Jones, Marsden, 33
 June Yellows, 151
- Kallina, 3
 Kell System, 138, 152
 Kettlewell, H. B. D., 323-342
 Kidd system, 139
 Kirk, 415
 Kitching, J. A., 147
 Knight, R., 69
- Lack, D., 275
 lactation in mice, 291
Lamprobellis, 30
Lanius, 8
Larus, 9
 Lawler, Sylvia D., 152
Lebistes, 18, 51
Lepidium, 65
Lepidoptera, 3, 323
 Lerner, I. M., 273
 lethal gene, 187, 300 *sqq.*, 403
 balanced, 380
Leucopogon sp., genetics of, 79 *sqq.*
 Lewis effect, 343 *sqq.*
 Lewis system, 139, 152
Liliaceae, 396
Lilium, 199, 201
 linkage, 7, 26 *sqq.*, 152, 223, 283, 296, 300,
 325, 344 *sqq.*, 373 *sqq.*, 412, 413
 Limicolines, 11
Limosella, 33
Linanthus, 25
 Little, C. C., 287
Littorina, 3, 30
 livestock improvement, 147
Lobularia, 63
 localisation of breakage, 399
 Lockley, R. M., 16
 locus, complex, 380
Locusta, 5, 99, 386 *sqq.*
Lolium, 418
 longevity, 167
 Longstaff, T. A., 29
 lucerne, 291
Lupinus, 247
 Lupton, F. G. H., 150
 Lutheran system, 139, 152
Luzula, 81
Lybius, 14
- Macchetae pugnax*, 21
 McWhirter, K. A., 151
 maize, 103, 225, 377
 malaria, 38, 39
 maltose, 373
Malva, 32
Maniola jurtina, 265
 mannose, 374
 map distance, 344, 346
Marasmius perniciosus, 70
 mating, barriers, 145
 behaviour, 26
 groups, 56, 284
 sequence, 188
 Mather, K., 151
 maximum likelihood, 390, 393
 Mayr, E., 30, 275
Medicago, 86, 219
Megapodidae, 29
 megasporogenesis, 82-84
 meiosis, 145, 203
 in *Allium*, 117
 in *Aspergillus*, 354 *sqq.*
 in *Drosophila*, 385
 in *Leucopogon*, 83
 in *Locusta*, 386
 in *Oenothera*, 295 *sqq.*
 in rye, 95 *sqq.*, 399 *sqq.*
 in *Saccharomyces*, 374 *sqq.*
Melampyrum, 33
 melanin metabolism, 147
 melanism, 15 *sqq.*, 256
 industrial, 323 *sqq.*
Melanium, 33
Melanoplus, 10
 melibiose, 374
Melipona, 18
Melissa, 32
 Mendel, 1
 mental processes, 277
 meristic characters, rye, 105
 metacentric group, 129
 metrical characters, rye, 105
Metridium, 17
 mice, 289, 290
Microcelis, 14
 microcyte, 120-122
 micronucleus, 102, 121
 micro-organism, 144, 249, 275
 microspores, 80
Microtus, 132
 migration, 10, 338
 mildew, 149
 mimicry, 6 *sqq.*
Misumenena, 24
 mitochondria, 147
 mitosis, 145, 199, 249
 in *Allium*, 117
 in *Aspergillus*, 354 *sqq.*
 in *Drosophila*, 385
 in *Hyacinthus*, 391
 in rye, 100

- mitotic, recombination, 355 *sqq.*
 length, 391
 MNL system, 139-140
 MNS system, 152
 mobile chromosome ends, 103
 modifiers, 69, 261
Mollusca, 4, 30, 51
 Monocotyledons, 4
 monosaccharides, 374
 Morgan, T. H., 1
 morphism, 1-52
 morphological characters, 168
 mosaicism, 385
 motility, 290
 Mourant, A. E., 280
 mouse, 380, 413
 Muller, 40
Muscicapa, 23
Mustela, 51
 mutagen, 249
 mutagenic, action, 195, 197, 290
 sensitivity, 152, 193
 mutant genes, *Drosophila*, 157
 mutation, 239, 343, 347 *sqq.*, 379 *sqq.*, 399,
 406, 409 *sqq.*
 chemical, 187 *sqq.*, 210, 290
 rate, 188, 195, 282, 290
 spectrum, 187, 197
 myopia, 40
Mytilus, 24
Myxomycetes, 145
- nail-patella syndrome, 152
Narcissus, 3
 nectary arrangement, 63
 Neel, J. V., 282
Neotana, 51
 neoteny, 275
Neozephyrus, 23
Neurospora, 147, 364
Nicandra, 10
 Nichols, J. E., 419
Nicotiana, 19, 54, 55, 69, 227, 232, 293 *sqq.*
Noctua castanea, 51
 nucleolar microcytes, 120-122
 nucleolus, 200
 nucleic acid, 278
 nucleus, 147, 316
- oak, 326 *sqq.*
Oenothera, 84, 89, 293 *sqq.*
 Oginsky, E. L., 144
 oligogenes, 153
 onycho-osteodysplasia, 152
 oogonium, 385
Orchidaceae, 122
 outbreeding, 314, 415, 418
- Panaxia*, 331
 P system, 139, 152
Paramecium, 152, 284
Paris, 406
Parthenium, 69, 74, 75
 pathology, 148
 penetrance, 406
 penicillinase, 290
 perithecium, 346
Peromyscus, 51, 52
 Petrella, L., 249
Petunia, 293 *sqq.*
 phosphorus-32, 187 *sqq.*
 physiology, 143, 144
 cell, 147
 plant, growth, 148
 tumours, 148
 plasmagene, 147, 151
 plastids, 81
Podospora, 385
Polia, 340
 pollen, 216, 409, 410
 distribution, 62
 mother cell, 295, 316, 391 *sqq.*, 403 *sqq.*
 reaction, 69 *sqq.*
 tube growth, 73, 294 *sqq.*
 pollination, 201
 polygenes, 153 *sqq.*, 273, 289, 314, 320
 polygenic balance, 293, 314
 polymorphism, 255 *sqq.*, 281, 283
 polyploidy, 62, 74, 80 *sqq.*, 120, 188, 252,
 314, 381
 population, cytology, 418
 dynamics, 155-156
 size, 340
 structure, 148, 273, 418
 position effect, 343, 382
 potato, 150
 poultry, 261
 Prantl, 415
 predation, 323, 329
 pregnancy toxemia, 37
Primula, 293 *sqq.*
 Pritchard, R. H., 343-371
 protozoa, 145
 pseudoallelism, 382
- Race, R. R., 278
 radiation, 194
 raffinose, 373
Raphanus, 59, 61, 62
 ratio-cline, 9, 21
Rattus, 51, 132
 reciprocal cross, 297 *sqq.*
 difference, 300
 recombination, 145, 343 *sqq.*, 355, 373 *sqq.*,
 385, 397
 value, 413, 414
 Rees, H., 93-116, 399-407
 Renwick, J. H., 152
 reproduction, 145
 reptiles, 29
 respiration, 143
 retinitis pigmentosa, 260
 Rhesus system, 35, 141, 152, 279, 280
Rhinanthus, 33

- Rhipidura*, 16
Ribes, 132, 133
Richea, 81
Ricinus, 23
 Riley, Ralph, 150
 Rogers, H. H., 69-77
 rogue peas, 1
Romalea, 132
Romulea, 32
 root, cuttings, 1
 eelworm, 150
 tips, 217, 249
Rosa canina, 89
Rosaceae, 293
 Rowlands, D. G., 151
Rubus, 3
 rust, 149
 rye, 93 *sqq.*, 150, 219, 399 *sqq.*

Saccharomyces, 143, 373 *sqq.*
Sagartia, 18
Salmo trutta, 52
Salmonella, 290
 Sanger, R., 278
Satyros, 3
Saxifrage, 33
 Scabious, 31
Schistocerca, 386
 Schull, W. J., 282
Scilla, 32, 97, 122 *sqq.*, 210
 Scilly Isles, 265
Sciurus, 14
Scolopendrium, 286
 Scoring methods, 325 *sqq.*
Scrophulariaceae, 293
Secale, 93, 150, 219, 399
 seed, development, 84-88
 fertility, 87-88
 set, 201, 219
 segregation, 291, 298 *sqq.*, 324, 379
 mitotic, 355, 362, 411
 ratio, 413
 selection, 273, 274, 281, 314, 323 *sqq.*, 415,
 418, 419
 coefficient, 157
 natural, 153, 176, 274
 response, 169, 291
 wheat, 150-151
 selective value, 35, 335, 339
 selfing, 199, 219
Selidosamidae, 323
 sensory capacity, 40 *sqq.*
 serology, 278
 Seshiaya, R., 30
 sex, chromosome, 187
 determination, 415
 linkage, 41, 156, 188, 265, 281
 micro-organisms, 144
 Sharpe, H. S., 289
 Sheppard, P., 9, 25, 27
 sickle-cell anaemia, 38
Silene, 33

 Slonimski, P., 143
 Smith, C. A. B., 146
 Smith-White, S., 79-91
 Sneath, P. N. A., 290
 Snoad, Brian, 129-134
 soil micro-organisms, 249
Solanaceae, 150, 293 *sqq.*
 somatic instability, 129-134
 Sonneborn, 284
 species crosses, 199
 sperm sensitivity, 193, 196
 speciation, 314
Sphaeroma, 23, 52
Spinacia, 132
 spindle abnormalities, 120, 214
Spirorbis, 51
 sponges, 4, 31
 sporocyte, 378
 spotting, 265
 Stamm, G. W., 147
 starch, 295, 300
Stercorarius, 24
Sterculiaceae, 76
 sternopleural chaeta, 417
 sterility, 54, 57, 69 *sqq.*, 150, 159, 188, 302
 Stocker, B. A. D., 290
 strawberry, 151
Streptopelia, 34
Strix aluco, 29
 structural characters, rye, 109 *sqq.*
 Sturtevant, A. H., 8
Styphelieae, 80, 82, 86
 sucrose, 374
 super-gene, 27, 141, 149
 Swann, M., 147
Symphytum, 32

 "tasting" allele, 41
 taxonomy, 255
Taxus, 3
Tealia, 18
Telephorus, 3
 telocentric group, 129
Terias, 3
 terminalisation, rye, 95, 108
 tetrad analysis, 354, 364, 376 *sqq.*
Thais rumina, 51
 thalassaemia, 40
Thalassoma, 52
Theobroma cacao, 69, 219
Theridion, 23
 Thompson, J. B., 399-407
 time factor in mutations, 187 *sqq.*
 Tinbergen, N., 275
 tissue gradient, 89
Tradescantia, 101, 120 *sqq.*
 transduction, 290
 translocation, 382
Trichosurus, 16, 51
Trifolium, 19, 55, 293 *sqq.*, 417
Trillium, 97
Triphaena comes, 256

- Triticinae* sp., 150
Triticum, 132
Triturus, 29
Tryphaena, 51
Tulipa, 405
tumours, 148
- ulcers, 38
Umbelliferae, 33
Umbreit, W. W., 144
Uria aalge, 8
Urochorda, 4
Ursus, 29
Ustilago, 385
Uvularia, 122 *sqq.*, 390, 400
Vaccinium, 81
- variegation, 409 *sqq.*
variation, 1, 256, 265, 282, 418, 419
variety crosses, 201
Verbascum, 33
Verhulst, 178
Veronica, 33
vertebrates, 4
viability, 9, 35 *sqq.*, 155, 173, 300 *sqq.*,
324 *sqq.*, 381, 413
Vicia, 102, 122, 151, 212
Vincent, M. A. C., 413-414
Viola, 33
virus, 29
- Visconti, 145
Volucella, 8
Vulpes, 22
Vuori, 35
- Waddington, C. H., 28, 147
Warburg, 143
Waterhouse, 36
Weismann, 145, 286
Wenrich, D. H., 144
Westergaard, 147
wheat, 150-151, 246
Whitehouse, R. N. H., 150
Williams, W., 419
Wills, A. B., 291
wing size, 169, 182
Winge, Ø., 373-384
Wright, Sewall, 35
- Xiphophorus*, 18
X-rays, 187 *sqq.*, 199, 216
Xylotripes, 3
- Young, J. Z., 277
- Zea mays*, 149
Zuckerman, S., 277
Zygaena, 3
zymase, 374