

INDEX

- Acacia*, 57 *sqq.*
 recessives in, 60 *sqq.*
 linkage in, 63
 acclimatisation, temperature, 282
 development, 282
 adaptation, 157
 adaptive value, 277
 affinity, 127
 agglutination, 73
Agropyron, 129 *sqq.*
 alleles, association of, 11
 distribution of, 11
 pseudo-, 234, 280
 multiple, 276
 self-sterility, 276
 semi-dominant, 279
 semi-lethal, 253
 Allison, A. C., 440
Allium, 371
 ameiosis, 135
 amphidiploid, 319
 Andrewartha, H. G., 120
 animal numbers, 120
 antheridium, 248 *sqq.*
Anthoxanthum, 201, 363
 antigen, 285, 427
 Enothera, 255
 apogamy, 253
 apomixis, 131 *sqq.*
 apospory, 157, 253
 archegonium, 247, 248
 array statistics, 12
 ascospore, 280
Aspergillus, 124, 234, 254, 279, 280
Asplenium, 253
 assimilation, genetic, 281
 assortative mating, 323
Astroloma, 441
 asymmetry, bilateral, 419, 283
 asynapsis, 151 *sqq.*, 409
 Auerbach, C., 281
 autogamy, 257
 autosomal lethals, mice, 123
Avena, 109 *sqq.*

 backcross, 1 *sqq.*, 225 *sqq.*
 triplex, 208, 212
 back-mutation, 279
 bacteria, 435
 balance, internal, 244
 relational, 244
 balanced lethal systems, 265
 Bartlett, test, 415
 Bauer, 435
 Bateman, A. J., 257
 Bateman, K. G., 281
 B-chromosome, 195, 345, 355
 Bennet, H. J., 278
 Bennett, J. H., 51-55, 263-270
 Binet, F. E., 51-55

 Birch, L. C., 120-121
 Bird, G. W. G., 425-429
 birth control, 278
Biston betularia, 287 *sqq.*, 439
 Blackwood, M., 353
 blood groups, 165
 ABO, 69 *sqq.*, 126
 Duffy, 285
 duodenal ulcer and, 126
 frequencies, Ireland, 69 *sqq.*
 gene frequencies, 285
 poultry, 243
 race and, 161 *sqq.*, 285, 425 *sqq.*
 Rhesus, 69 *sqq.*, 285, 425
 sex and, 777
 blood transfusion, 72, 285
Bombyx, 398
 body size, *Drosophila*, 125
 bracken, incompatibility in, 247 *sqq.*
 Breese, E. L., 323-343
 Brown, A. G., 237-245

 Calef, E., 279
Caltha, 201
 camouflage, 439
Campanula, 99, 370
 Carter, T. C., 284
 Catcheside, D. G., 205-218, 345-351
Centaurea, 201, 202
 centromere, 99, 119, 127, 208, 217, 229,
 284, 345, 382
 abnormal, 200
 interference, 231
 terminal, 197 *sqq.*
Cheiranthus, 257
 chromatography, 280
 chromocentres, 367, 373
 chiasma, 151, 284, 380 *sqq.*
 frequency, 156, 232, 234, 409, *sqq.*
 chromatid, 229, 345, 350, 386
 aberrations, 123
 segregation, 105 *sqq.*
 chromomere, 434
 chromonema, 124
 chromosome, aberrations, 129 *sqq.*, 385, 431
 accessory, 195
 acentric, 112, 384 *sqq.*
 behaviour, 99, 409 *sqq.*
 breakage, 199, 367 *sqq.*
 complement, 119, 268
 deficiency, 156
 dicentric, 156, 384 *sqq.*
 differentiation, 85 *sqq.*
 distribution, 197, 367 *sqq.*
 disjunction, 99, 354 *sqq.*
 doubling, 85, 94, 109, 231, 349
 fragment, 112, 195 *sqq.*, 371 *sqq.*
 genetical control, 99
 genetics of B, 345 *sqq.*, 353 *sqq.*
 homologous, 263, 370

- chromosome, lagging, 148 *sqq.*
 loss of, 109
 maize, 345 *sqq.*, 353 *sqq.*
 morphology, 88, 119, 367, 370
 neocentric, 153
 number evolution, 284
 pairing, 156
 relational coiling, 151
 ribbon, 441
 ring, 133
 spiralisation, 112, 151, 374 *sqq.*
 sticky, 111
 supernumerary, 195
 synthesis, 113, 114
 telocentric, 197, 386
Cycotettix, 200
 Clarke, C. A., 126
 Clayton, G. A., 282
 clone, bracken, 248 *sqq.*
 clover, 440
Cælopa, 126
 colchicine, 109
 combining ability, 31 *sqq.*
 complementary genes, 1, 27 *sqq.*
 components of variation, 18 *sqq.*
 linkage, 23 *sqq.*
 cotton, selection in, 303 *sqq.*
 correlation, between gametes, 277
 phenotypic, 125, 329 *sqq.*
 genetic, 323 *sqq.*
 co-variance between relatives, 31, 35
 Cragg, J. B., 431
 Crosby, J. L., 125
 crossing-over, 227 *sqq.*, 265, 367, 378
 inversion, 133
Cruciferae, 261
 crypsis, 293 *sqq.*
 cytoplasm, 280
 cytoplasmic gradient, 114

Dahlia, 229
 Darlington, C. D., 441
 Darwin, 433
Datura stramonium, 229
 Davidson, D., 439
 Dawson, C. J., 69-84
 Dawson, G. W. P., 69-84, 285
 deoxyribonucleic acid, 124, 397
 development, apomictic, 136
 embryonic, 283
 embryo-sac, 135
 sexual, 135
 vestigial tail, 283
 diallel analysis, 1, 31, 420
 cross, 413
 modified, 32
 differentiation, 114, 123
 dinosaurs, 431
Diptera, 437
 distyly, 219 *sqq.*
 Dobzhansky, T., 277
 dominance, 276, 324, 421, 422
 analysis of, 1, 387
 in tetraploids, 219, 223

 Dowdeswell, W. H., 432
 Dowrick, V. P. J., 219-236
 dog, 440
 drift, genetic, 242, 432
Drosophila, 124, 234, 267 *sqq.*, 281, 441
 body size, 125
 egg production, 125
 melanogaster, 124, 243, 282, 422
 subobscura, 282
 duodenal ulcer, 126
 dyad, 136, 198, 377

 ecology, 120, 431
 egg production, *Drosophila*, 125
 poultry, 243
 electrophoresis, 427
 embryo-sac, 135, 142 *sqq.*, 345
 endomitosis, 155, 373
 endosperm, 130 *sqq.*, 140, 367
 hybrid, 195 *sqq.*
 environmental effect, 1 *sqq.*, 334
 epistasis, 35, 63, 224, 277
Ericales, 440
Erigeron, 153
 ethnology, 161
 euchromatin, 196 *sqq.*
 euchromatic region, 85, 368
 Evans, D. A., 126
 evolution, 119, 135, 254, 342
 chromosome number, 284
 mechanism of, 432
 rate of, 121

Fagopyrum, 231
 Falconer, D. S., 283
 fall ratio, 24, 25
 fertility, 132, 221, 233, 284, 431
 Acacia, 57 *sqq.*
 human, 278
 Trillium, 199, 202
 fertilisation, genetic control of, 157
 preferential, 254, 345 *sqq.*, 353 *sqq.*
Festuca, 127, 199, 201, 363
 Feulgen technique, 368
 Fincham, J. R. S., 279
 Finney, J., 275
 Fischberg, M., 284
 Fisher, Sir Ronald, 35, 276, 432
 fitness, 125
 flagellates, 433
 flowering time, *Nicotiana*, 1 *sqq.*, 329 *sqq.*
 Ford, C. E., 284, 440
Fritillaria, 399
 fungus, 254
 homothallic, 280

 gametophyte, 377, 400
 geitonogamy, 259
 gene, action, 434
 albino, *Prunus*, 242
 complex, 227, 234
 deleterious, 238
 diffusion, 432
 duplicate, 4, 27 *sqq.*

- gene, frequency, 237 *sqq.*, 285, 323, 328
 lethal, 237, 263 *sqq.*
 maps, 285
 neutral, 238, 241
 structure, 434
 generation matrix, 33, 264 *sqq.*
 genetic, assimilation, 281
 background, 285
 correlation, *Drosophila*, 281
 drift, 96, 121, 242, 432
 erosion, 237
 isolation, 260
 material, organisation of, 285
 parameters, 31 *sqq.*
 resolving power, 124
 genoid, 435
 genome, *Trillium*, 85
 genotype-environment interaction, 1, 22
sqq., 316
 germination rate, 57 *sqq.*, 127
 Glovers, S. W., 280
Godetia, 195, 201
 Goldschmidt, R. B., 433-437
 Goodspeed, T. H., 119
Gossypium, 234
 graft, cross, 280
 Grassé, P.-P., 441
 Griffing, B., 31-50
 Gruneberg, H., 283
- Hackett, W. E. R., 69-84
 hæmoglobins, 425 *sqq.*
 hæmolysis, 73
 Haga, T., 85-98
 Hair, J. B., 129
 Haldane, J. B. S., 123
 Hammerton, J. L., 284, 440
 Hardy-Wienberg law, 276
 Hayman, B. I., 271
 height, *Nicotiana*, 1 *sqq.*, 329 *sqq.*
 heritability, 282 *sqq.*
 significance tests, 124
 hermaphrodite, 126
 heterochromatic segments, 85
 heterochromatin, 196, 354, 367
 in endosperm, 396
 metamorphosis of, 373
 heterokaryon, 244
 heterosis, 5 *sqq.*, 28, 341, 411
 heterostyly, 219 *sqq.*
 heterothallism, relative, 254
 heterozygosis, 238 *sqq.*, 263, 282
 heterozygote, duplex, 208 *sqq.*, 224
 interchange, 99
 nulliplex, etc., 213
 simplex, 208 *sqq.*, 224
 superiority, 237 *sqq.*
 triplex, 208 *sqq.*
- Hieracium*, 153
 Holden, J. W. H., 109
 homeostasis, 238, 244, 283
 homostyly, *Primula*, 125, 219 *sqq.*, 231
 homozygosis, 269, 271
 host effect, 281
 H-segment, 267 *sqq.*
Hyacinthus, 389, 402
 hybrid, structural, 149
 hybridisation, *Trillium*, 85
- identical twins, *Agropyron*, 147
 Ikin, E. W., 425
 inbred, cotton, 314
 rye, 112
 inbreeding, 156, 263, 271, 282, 323, 409
 coefficient, 431
 depression, 67, 125, 340
 progress, 125
 theory, 276
 incompatibility, 125, 219 *sqq.*, 260, 284
 bracken, 247 *sqq.*
Nicotiana, 119
 inheritance, cytoplasmic, 435
 extranuclear, 280
 interaction, allelic, 234
 genic, 323 *sqq.*
 non-allelic, 1, 413
 interkinesis, 388
 inversion, 231
 irradiation, high frequency, 123
 gamma, 127
 ultra-violet, 279
 X-ray, 123, 281, 439
 isochromosome, 386
 isolation, sexual, 237, 281
- Jinks, J. L., 1-30
- Kacser, H., 285
 Kafer, E., 279
 Kammerer, 433
 karyogamy, 254
 Kettlewell, H. B. D., 287, 439
 Knight, G. R., 281
- Lamarck, 432
Lebistes, 126
 lethals, autosomal, 123
 balanced, 265, 267
 dominant, 237
 induced, 123
 Lederberg, 435
 Lehmann, H., 425
Lepidoptera, 287 *sqq.*, 437, 439
 L'Héritier, Ph., 431, 435
 Li, C. C., 275, 432
 lily, 403
 linkage, 8, 19, 227, 234, 328, 431
Acacia, 63
 group, 283
 and inbreeding, 125
 litter-size, mice, 283
 locusts, 396
 locus, sex-linked, 276
Lolium, 127
Luzula, 114
Lycopersicum, 229
Lymantria, 435
Lythrum, 229, 276

- maize, see *Zea*
 Malecot, 432
 male-sterility, 157
 man, 234, 431, 440
 races, 161, 285, 425
 Manning, H. L., 303-322
 map distance, 124, 205, 229
 Mather, K., 271, 276
 mating, assortative, 323, 431
 half-sib, 282
 sib, 264, 323
 selfing, 51, 247, 263, 323
 parent-offspring, 268
 random, 51 *sqq.*, 323 *sqq.*
 McConnell, R. B., 126
Mecostetus, 399
 meiosis, 99
 in binucleate cells, 109 *sqq.*
 maize, 354
 non-synchronised, 109 *sqq.*
 suppression of, 133, 157
 melanism, industrial, 287, 439
Melanopus, 398, 399
 methionine synthesis, 280
 Mitchell, H. K., 120
 micronucleus, 113
 mitosis, sensitivity of, 439
 modifier, 281
 Moffett, A. A., 57-67
 Mole, R. H., 440
 Mota, M., 109
 Mourant, A. E., 425
 mouse, 234, 284
 autosomal lethals, 123
 primary sex ratio, 126
 mutagen, 270, 385
 mutation, 276, 281
 lethal, 263
 rate, 183, 237 *sqq.*, 403
 Salmonella, 123

 natural crossing, estimation of, 57 *sqq.*
 segregation and, 60
 natural selection, 413, 422
 estimation of, 287 *sqq.*
Narcissus, 199 *sqq.*, 388
Neurospora, 244, 279
 newt, 284
Nicotiana rustica, 1, 119, 328, 422
 non-allelic interaction, 1 *sqq.*, 81 *sqq.*
 non-disjunction, 99, 354, 376
 mitotic, 345 *sqq.*
 numerical, 205 *sqq.*
 Nordback, K., 281
 nuclei, competition between, 113
 generative, 114
 migrant, 112
 micro-, 148 *sqq.*
 polar, 321, 380
 restitution, 138
 vegetative, 114
 nucleolus, 112, 435
 nucleotide, 436
 pair, 124

Ochna, 146
 Oehlkers, Fr., 432
Oenothera, 106, 234
 olisterochromatin, 367
Orthoptera, 437
 Osborne, R., 286
 ovary transplantation, 281
 overdominance, 1, 6, 28, 328, 340, 414, 421
 Owen, A. R. G., 432

 panmixis, 318
 Pantelouris, E. M., 281
 paramixis, 156
Paris, 201, 383, 402
Parthenium, 142
 parthenogenesis, 132 *sqq.*
 Pateman, J. A., 279
 path coefficient, 276
 penetrance, 281
 Penrose, L. S., 431
 pentasomics, 215, 216
 phage, 280, 435
 phenocopy, 281
 Philip, U., 126
 Pirie, N. W., 431
Pisum, 99
 plasmagene, 435
 plasticity, 277
 plastid, 435
 pleiotropy, 243 *sqq.*
Poa, 156, 301
 pollen mother cells, 109, 129, 147, 153
 pollen tube growth, 220, 255
 polygenic inheritance, 440
 polymorphism, 121, 237, 277, 440
 polynemy, 441
 polyploidy, *Trillium*, 85 *sqq.*
 Pontecorvo, G., 124
 population genetics, 275
 size, 431
 position effect, 234
 poultry, 286
 predation, 287 *sqq.*
Primula, 125, 219 *sqq.*
 progeny test, 125
 prototroph, 279
Protozoa, 435
Prunus, 237 *sqq.*
 pseudogamy, 134, 155
Pteris, 253
 pollen grains, maize, 357 *sqq.*

 Quadling, C., 123

 rabbit, 440
 Race, R. R., 177, 285
 radiomimetic substance, 393
 reciprocal difference, 5, 221, 233, 360
 recombination, 284, 413
 fraction, 268
 frequency, 24, 53
 value, 64
 reduction, double, 205 *sqq.*
 relational balance, 66, 340, 342

- Rees, H., 409-424
 Reeve, E. C. R., 125, 282
 Renner effect, 136
 reproduction, sub-sexual, 129, 157
 Reusch, J. D. H., 127
 Revell, S. H., 123
Rhoeo, 107
Rhyacia, 121
 Robertson, A., 281, 282
 Robertson, F. W., 125
 Roper, J. A., 124, 279
 Rutishauser, A., 195-204, 367-407
 rye, 99 *sqq.*, 409 *sqq.*
- Salmonella*, 123, 280
 Sanger, R., 285
 scaling tests, 2 *sqq.*
Scilla, 114, 389
 scoring methods, 293 *sqq.*
 seasonal effects, 20
Secale, 201, 363
 segregation, chromatid, 276
 modes of, 205
 polarised, 346 *sqq.*
 random, 346 *sqq.*
 tetraploid, 208
 tetrasomic, 217
 trisomic, 217
 self-fertility, *Primula*, 223, 234
 self-incompatibility, 257 *sqq.*
 selection, 66, 121, 254, 281
 against homozygotes, 271
 during inbreeding, 125
 genetic response, 237
 index, cotton, 303 *sqq.*
 industrial melanism, 287 *sqq.*
 intensity, 125
 natural, 96, 413
 stabilising, 244, 303
 selective, advantage, 353, 363
 value, 277
 serum, 427
 groups, 73
 sex-linkage, 276
 sex ratio, primary, 126
 sexual isolation, 237, 281
 Sharpe, H. S., 280
 sheep, 440
 Sheppard, P. M., 126
 sickle-cell, 425
 Slizynski, B. M., 283
 Smith-White, S., 440
 Smith, P. Maynard, 282
 somatic aberrations, 354
Sorghum, 201
 speciation, 119, 121, 342
 Trillium, 85, 94
 spindle, 435
 pole, 345, 346
 Spurway, H., 126
 stability, 28, 285, 414 *sqq.*
Stenobothrus, 399
 sterility, 99
 male-, 132, 157
 sternopleural bristles, 283
 Stocker, B. A. D., 123
 surface specificity, 285
 survival rates, 271
- Tantawy, A. O., 282
 tetrad analysis, 371
 tetraploid ratios, 229
Thera, 121
 Thoday, J. M., 283
 Thompson, J. B., 99, 409
Tradescantia, 401, 402
 transduction, 280
 translocation, 283, 284, 386
 transplantation, tumour, 440
Trillium, 85, 195 *sqq.*, 367 *sqq.*
Trimerotropis, 200
 trisomics, 215
Triticum, 398
 tumour, 440
 twins, *Agropyron*, 147
- urodele, 441
- variation, 66, 237, 276
 additive genetic, 1, 35, 124, 125
 continuous, 323
 during inbreeding, 14, 303, 314
 environmental, 125, 323
 estimation of components, 18
 F₁, 414
 free, 339
 fixable, 323
 genetic, in inbreds, 314
 non-additive genetic, 1, 35, 125
 persistency, 318
 potential, 339 *sqq.*
 Venkateswarlu, J., 217
 viability, 64, 216, 282
 relative, 233
Vicia, 123
 viruses, 435
- Waddington, C. H., 281
 Wagner, R. P., 120
 Wallace, M. E., 127
 Watkin, I. M., 161
 Wilkie, D., 247
 Wilkinson, G. N., 214
 Williams, W., 237
 Woolf, B., 124
 Wright, Sewall, 277, 431
 W-surface, 277
- X-rays, 282
 effect on chromatids, 123
 mutation, 281
 recovery from, 281
- Zea mays*, 99, 195, 201, 205 *sqq.*, 234, 345,
 389