

CONTENTS

*1	Genetic Material	1
*2	Gene Segregation	8
*3	Mitosis	16
*4	Meiosis	23
*5	Segregation in Man — Multiple Allelism	32
*6	Independent Segregation	39
7	Gene Interaction and Phenotypic Expression	49
8	Gene Interaction and Continuous Traits	56
9	Multiple Alleles and Lethals	62
10	Pleiotropism, Penetrance and Expressivity	68
11	Studies of Human Twins	74
*12	Sex-Linkage	81
13	Sex Determination (I)	94
14	Sex Determination (II)	100
*15	Intergenic Linkage	111
*16	Crossing Over and Chiasma	116
*17	Gene Arrangement and Chiasmata	128
*18	Changes Involving Whole Genomes and Single Whole Chromosomes	137
*19	Structural Changes within Chromosomes	150
20	Cytogenetics of <i>Oenothera</i>	162
21	Natural and Induced Chromosomal Changes	173
22	Position Effect and Allelism in <i>Drosophila</i>	185
*23	Gene and Point Mutations	197
24	Point Mutants — Their Detection and Effects in Individuals	204
*25	The Genetic Control of Mutability	213
26	The Gene Pool in Cross-Fertilizing Populations	224

27	Mutation and Selection — Nonrandom Mating and Heterosis	229
28	Mutational Loads and Their Consequences to Populations	239
29	Races and the Origin of Species	252
30	Developmental Genetics	262
*31	Biochemical Genetics (I)	271
*32	Biochemical Genetics (II)	281
*33	Chemical Nature of Genes	293
*34	Organization, Replication, and Types of DNA <i>in Vivo</i>	306
*35	Replication of DNA <i>in Vitro</i>	320
*36	Bacteria: Clones and Mutation	329
*37	Bacteria: Recombination (I. <i>Transformation and Strand Recombination in Vitro</i>)	340
*38	Bacteria: Recombination (II. <i>Conjugation</i>)	349
*39	Bacteria: Recombination (III. <i>The Episome F</i>)	356
*40	Bacteria: Recombination (IV. <i>Episomes and Nucleotide-Sharing</i>)	366
*41	Bacteria: Recombination (V. <i>Transduction</i>)	374
*42	Viruses: Recombination in Bacteriophage (I)	382
*43	Viruses: Recombination in Bacteriophage (II)	390
*44	Viruses: Bacterial, Animal, and Plant	400
45	Extranuclear Genes and Their Interrelations with Nuclear Genes	409
*46	Gene Action and Operons	421
*47	Gene Action and Amino Acid Coding	427
48	The Biochemical Evolution of Genetic Material	439
*49	Genes — Nature and Consequence	444

Author Index, 453 Subject Index, 457

Supplements:

- I *Part of a Letter (1867) from Gregor Mendel to C. Nägeli*
- II *Nobel Prize Lecture (1934) of Thomas Hunt Morgan*
- III *Nobel Prize Lecture (1946) of Hermann Joseph Muller*
- IV *Nobel Prize Lecture (1958) of George Wells Beadle*
- V *Nobel Prize Lecture (1958) of Edward Lawrie Tatum*
- VI *Nobel Prize Lecture (1959) of Arthur Kornberg*
- VII *Nobel Prize Lecture (1958) of Joshua Lederberg*