Figures

1.	Epigenetic action system of cell	7
2.	Jacob and Monod's repressor-operator system	20
3.	Cascade repression	24
4.	Possible evocator effects on gene-action systems	27
5.	Pathways of histidine synthesis in Neurospora crassa	38
6.	Complementation between alleles at locus histidine-1	39
7.	Diagram and interpretation of simple complementation series	
	of three alleles	40
8.	Four types of band behavior in Rhynchosciara salivary	
	chromosomes	52
9.	Banding pattern in chromosome II R of Drosophila bucksii	53
10.	Puff changes in chromosome III L of Drosophila melano-	
	gaster	55
11.	Small parts of some lampbrush chromosomes of crested newt	57
12.	Diagram of loop formation in newt lampbrush chromosomes	59
13.	Diagram of main ultrastructural changes in early development	
	of urodele notochord	70
14.	Development of retinulae and cone cells in Drosophila eye	74
15.	Protein molecules	93
16.	Formation of ordered aggregates of collagen	96
17.	Diagrams of tropocollagen macromolecular packing in native	
	type and segment long-spacing arrangement	97
18.	Cross-linked arrangement of fibers found in preparations of	
	tropomyosin stained with phosphotungstic acid	99
19.	Structure of flagellum and basal body in flagellate Pseudo-	
	trychonmypha	100
20.	Sections through sheets and sheet-generated structures	106

	FIGURES	xiii
21.	Structure of grana and intergrana regions of chloroplast	108
22.	Chloroplast development in higher plants	110
23.	Submicroscopic structure of myelin forms	114
24.	Two types of lipoprotein film	116
25.	Growth of zigzag myelin figure	117
26.	Condition-generated pattern	125
27.	Turing's patterns	127
28.	Pattern with hairs at corners	129
29.	Cell architecture in scolopale organ of locust ear	136
30.	Complex cell structures	137
	Anchor and plate in Leptosynapta	144
32.	Two arrangements of anchor and plate during development	145
33.	Development of isolated plates	146
34.	Malformations of anchor and consequential rearrangements	
	of plate in several species of Holothurians	146
35.	Stages in division of Micrasterias	149
36.	Division of binucleate double cell of Micrasterias	150
37.	Development of asymmetrical half-cells	151
38.	Guyot-Bjerknes force	157
39.	Transformation of Naegleria from an amoeboid to a flagellate form	158
40	Stages in reaggregation of amphibian blastula cells traced	150
10.	from a time-lapse film	164
41	Arrangement of disaggregated cells after sorting out	167
	Relation between surface packing and various types of ad-	107
	hesiveness (or viscosity)	170
43	Possible mechanisms of anteroposterior elongation of gastru-	170
٦٥.	lating presumptive mesoderm in amphibia	176
44	Shapes of nuclei in precartilage cells	178
	Transformation of precartilage nuclei shapes in movement	170
٦٥.	from central axis	179
46	Development of bones	181
	Results of adding material to the developing chick limb-bud	186
	Illustration of evolutionary changes in morphology of avian	100
70.	leg skeleton caused by changes in proportion of presumptive	
	material in various bones	186

xiv FIGURES

49.	Modifications of basic pentadactyl pattern in evolution	188
50.	Organs formed by fusion of two anterior leg imaginal-buds in	
	Drosophila	189
51.	Amphibian head skeletons	191
52.	External structures on amphibian heads	192
53.	Effects of grafting larval (5th instar) skin in Rhodnius on	
	cuticular pattern on adult abdomen	200
54.	Hypothesis of skin grafting effects in Rhodnius	201
55.	Patterns on shells of Theodoxus fluviatilis	202
56.	Patterns in wings of Plodia interpunctella	204
57.	Reduction of patterns	206
58.	Secondary elaboration of pattern	207
59 .	Tarsal segmentation in wild-type and mutants of Drosophila	
	melanogaster causing four jointed legs	208
60.	Tarsal segmentation in mutants and double homozygotes	
	which disrupt pattern	209
61.	Local specificity in effect of segmentation genes	210
	Disrupted segmentation	211
63.	Effect of various genes on tarsal segmentation	213
64.	Head and thorax of dachsous combgap (left) and dachsous	
	combgap four jointed (right) fly	215
65.	Group of wool follicles in transverse section	217
66.	Hair patterns on metathoracic mesothorax in flies of assimi-	
	lated bithorax stock	220
67.	Hypothetical operation of bithorax alleles	223
68.	Smoothing out of abnormal pattern	224
69.	Results of selection for bristle number in populations segre-	
	gating for scute in Drosophila	228
70.	Vibrissae in the mouse	230
71.	Canalization of hair number	231
72.	Location of ocelli and associated bristles in wild-type Droso-	
	phila	232