

Contents

<u>I. The Wall of Growing Cells</u>	1
1. The Molecular Structure of the Primary Cell Wall and Elongation Growth	1
P. Albersheim, M. McNeil, and J.M. Labavitch	
2. Cellulose Metabolism and Cell Growth	13
G.A. MacLachlan	
3. Wall Extensibility in Relation to Auxin Effects	21
Y. Masuda	
<u>II. Hormones - Membranes</u>	27
4. Membrane-Bound Auxin Receptors: Solubilization and Characterization	27
M.A. Venis	
5. Auxin Hormone-Plasma Membrane Interactions	35
D.J. Morré and J.H. Cherry	
6. Interactions Between Indole-3-Acetic Acid and Phospholipids in Deuteriochloroform as Determined by ¹ H, ¹³ C, and ³¹ P NMR Spectrometry	44
A. Marker, L.G. Paleg, and T.M. Spotswood	
7. Physiologic Implications of the Hormonal Control of Ion Transport in Plants	54
E. Marré	
<u>III. Hormone Analysis</u>	67
8. The Application of High Performance Liquid Chromato- graphy to the Analysis of Plant Hormones	67
A. Crozier and D.R. Reeve	
9. Gas Chromatographic Identification and Quantitative Estimation of Natural Auxins in Developing Plant Organs	77
F. Wightman	
<u>IV. Auxins and Root Growth Inhibitors</u>	91
10. Interactions in Translocation of Growth Regulators in Shoots with Special Reference to Auxin Transport as Affected by Two Inhibitors, a Morphactin and Lycoricidinol	91
H. Kaldewey, U. Ginkel, R. Karmann, and I. Paland	
11. Auxins and the Regulation of Root Growth	100
M.C. Elliott	
12. Root Growth Inhibitors	109
R.L. Wain	
13. Growth Inhibitors in Growing and Geostimulated Maize Roots ..	115
P.E. Pilet	

<u>V. Gibberellins and Cytokinins</u>	129
14. Some Aspects of Gibberellin Metabolism in Higher Plants	129
J. MacMillan	
15. Cytokinin-Binding Proteins in Higher Plants	139
J.E. Fox and J. Erion	
16. Cytokinin Relations in the Whole Plant	147
P.F. Wareing, R. Horgan, I.E. Henson, and W. Davis	
17. Cytokinin and Cell Metabolism	154
D. Klämbt	
<u>VI. Ethylene and Other Regulators</u>	161
18. Auxin and Ethylene and the Control of Cell Growth. Identification of Three Classes of Target Cells	161
D.J. Osborne	
19. On the Role of Ethylene in Aging	172
H. Kende and A.D. Hanson	
20. Phenolic Substances and Their Possible Role in Plant Growth Regulation	181
V.I. Kefeli and M. Kutacek	
21. Some effects of Dikegulac on the Physiology of Whole Plants and Tissues; Interactions with Plant Hormones	189
P.F. Bocion and W.H. de Silva	
<u>VII. Gravity and Light Effects</u>	199
22. Geotropic Response Mechanism in Root and Shoots	199
M.B. Wilkins	
23. Ultrastructural Aspects of Georeceptors in Roots	208
A. Sievers and D. Volkmann	
24. Hormonal Regulation of Phototropism in Dicotyledonous Seedlings	218
J. Bruinsma	
25. Light, Rhythmus, and the Problem of Florigen	226
A.W. Galston	
<u>VIII. Hormonal Control</u>	240
26. The Hormonal Regulation of the Cell Division Cycle	240
C. Péaud-Lenoel	
27. Hormonal Controls of Abscission: Biochemical and Ultrastructural Aspects	249
F.T. Addicott and S.M. Wiatr	
28. Hormonal Regulators of Plant Flowering	258
M.K. Chaylakhyan	
29. Hormonal Relationships in Whole Plant Senescence	273
P.J. Davies, W.M. Proebsting, and T.J. Gianfagna	
30. Growth Substances and Protoplasts	281
E.C. Cocking	
<u>IX. Paper Demonstrations</u>	286
<u>Subject Index</u>	301