

CONTENTS

Contributors.....	vii
Editor's Introduction	viii
Foreword	x
Contents	xi
List of Abbreviations	xiv

Session I - Calcium as a Mineral Nutrient

- Calcium Nutrition and Cellular Response.....	1
I. B. Ferguson	
- Calcium, Cell Walls and Growth.....	9
Robert E. Cleland, Sarbjit S. Virk, Douglas Taylor, and Thomas Björkman	
- Calcium Binding by Chloroplast Stroma Proteins and Functional Implications	17
Maria Burchert, Barbara Surek, Georg Kreimer, and Erwin Latzko	
- Calcium, Salinity and the Plasma Membrane	26
André Läuchli	

Session II - Compartmentation and Transport of Calcium in Plant Cells

- Molecular Biology of Plant P-Type Ion-Translocating ATPases.....	36
L. E. Wimmers, N. N. Ewing, and A. B. Bennett	
- Characterization of the Ca^{2+} -Transporting ATPase of the Plant Plasma Membrane Using Isolated Membrane Vesicles	46
Donald P. Briskin, Lynne H. Gildensoph, and Swati Basu	
- The Vacuolar ATPase: Structure, Evolution, and Promoter Analysis	55
L. Taiz, I. Struve, T. Rausch, P. Bernasconi, J. P. Gogarten, H. Kibak, and S. L. Taiz	

- Hormonal Regulation of Ca^{2+} Transport in Microsomal Vesicles Isolated from Barley Aleurome Layers60
Douglas Bush and Russell L. Jones

Session III - Calcium and Cellular Movements

- The Role of Calcium in Muscle Physiology.....67
Donald Bers
- Immunolocalization of Chara Calmodulin and the Reversibility of the Inhibition of Cytoplasmic Streaming by Ca^{2+} 79
Peter P. Jablonsky, Ruth P. Hagan,
Franz Grolig, and Richard E. Williamson
- Calcium, Cytoplasmic Streaming, and Gravity86
Randy Wayne, Mark Staves, and Yuli Moriyasu
- Calcium and the Regulation of Mitosis.....93
Peter K. Hepler, Dahong Zhang, and Dale A. Callaham

Session IV - Calcium as a Second Messenger

- Temporal and Spatial Changes in Ca^{2+} during Plant Development..... 111
Kenneth R. Robinson
- Calcium Ion Currents and Gradients in Furoid Eggs..... 120
Lionel F. Jaffe
- A Molecular Genetics and Mutant Analysis Approach for Elucidation of Molecular Mechanisms of Calcium Signal Transduction through Calmodulin:Calmodulin-Binding Protein Complexes 127
Emily Wilson, D. Martin Watterson, and Mark Collinge
- Localization of Calcium-Binding Proteins in Dividing Plant Cells..... 137
Susan Wick

Session V - Calcium and Responses to the Environment

- Voltage-Dependent Activation of Ca^{2+} -Regulated Anion Channels and K^{+} Uptake Channels in *Vicia Faba* Guard Cells 144
Julian I. Schroeder and Susumu Hagiwara

- Calcium Transport in the Unicellular Green Alga <i>Mesotaenium</i> <i>Caldarium</i> : A Model System for Phytochrome-Mediated Responses	151
Tom Berkelman and J. Clark Lagarias	
- Structural and Functional Analysis of Heat Shock Proteins.....	161
H. Michael Harrington, Stefan Moisyadi, and Ying Tang Lu	
- Interaction of Calcium and Auxin in the Regulation of Root Elongation.....	168
Michael L. Evans, Helen G. Kiss, and Hideo Ishikawa	
Poster Abstracts	176
Index.....	201