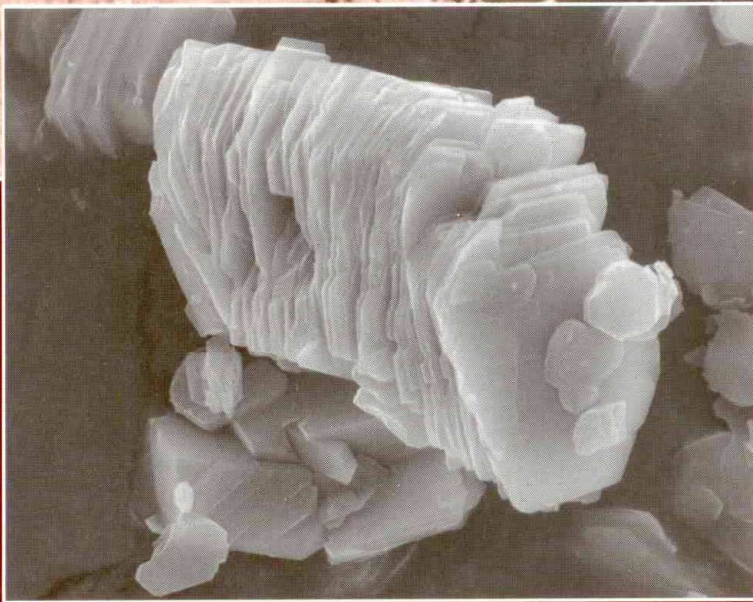
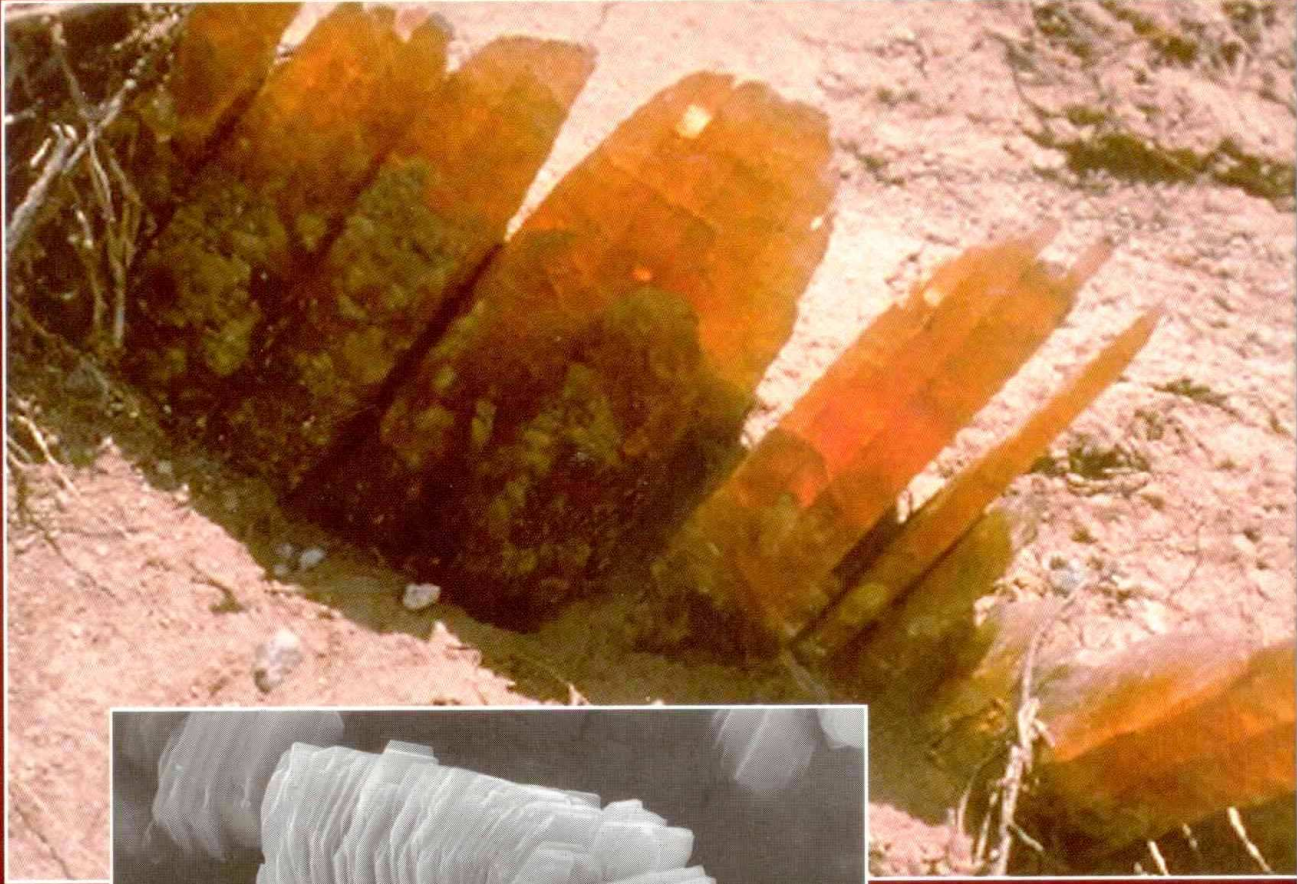


# Methods of Soil Analysis

## Part 5—Mineralogical Methods



SSSA Book Series 5 | A.L. Ulery & L.R. Drees, Editors

# Contents

<b>Foreword</b>	ix
<b>Preface</b>	xi
<b>Contributors</b>	xiii
<b>Conversion Factors for SI and Non-SI Units</b>	xv
Chapter 1	
<b>Sampling Soils for Mineralogical Analyses</b>	1
D.A. Soukup	
L.R. Drees	
W.C. Lynn	
Chapter 2	
<b>Preparing Soils for Mineralogical Analyses</b>	13
D.A. Soukup	
B.J. Buck	
W. Harris	
Chapter 3	
<b>Selective Dissolution Techniques for Mineral Analysis of Soils and Sediments</b>	33
Chao Shang	
Lucian W. Zelazny	
Chapter 4	
<b>X-ray Diffraction Techniques for Soil Mineral Identification</b>	81
Willie Harris	
G. Norman White	
Chapter 5	
<b>Thermal Analysis of Soil Minerals</b>	117
A.D. Karathanasis	
Chapter 6	
<b>Petrographic Microscope Techniques for Identifying Soil Minerals in Grain Mounts</b>	161
Warren Lynn	
J.E. Thomas	
L.E. Moody	
Chapter 7	
<b>Soil Micromorphology: Concepts, Techniques, and Applications</b>	191
M.J. Vepraskas	
M.A. Wilson	

Chapter 8		
<b>Digital Image Analysis of Soil Micromorphology</b>		227
A. J. VandenBygaart		
R. Protz		
C. Duke		
Chapter 9		
<b>Transmission Electron Microscopy for Soil Samples: Preparation Methods and Use</b>		235
Françoise Elsass		
Claire Chenu		
Daniel Tessier		
Chapter 10		
<b>Scanning Electron Microscopy</b>		269
G. Norman White		
Chapter 11		
<b>Use of Atomic Force Microscopy to Study Soil Particle Properties and Interactions</b>		299
Patricia A. Maurice		
Steven K. Lower		
Chapter 12		
<b>Electron Microprobe Techniques</b>		335
Renald N. Guillemette		
Chapter 13		
<b>Diffuse Reflectance Spectroscopy</b>		367
José Torrent		
Vidal Barrón		
Chapter 14		
<b>Analysis of Soils and Minerals Using X-ray Absorption Spectroscopy</b>		387
S.D. Kelly		
D. Hesterberg		
B. Ravel		
Chapter 15		
<b>Structural Allocation of Clay Mineral Elemental Components</b>		465
A.D. Karathanasis		
Chapter 16		
<b>Analysis of Layer Charge, Cation and Anion Exchange Capacities, and Synthesis of Reduced Charge Clays</b>		485
David Laird		
Pierce Fleming		
<b>Subject Index</b>		509