

## CONTENTS

<b>I. Protein Reactions Involving Sulfur</b>	
I.1 Chemical Modification of Thiol and Disulfide Groups in Proteins and Peptides	3
I.2 The Introduction of New Sulfhydryl Groups and Disulfide Bonds into Proteins	15
I.3 Disulfide Bonds in Proteins	25
I.4 The Varying Reactivity of the Cystine of Wool	33
I.5 A High-Sulfur Protein from Wool	51
I.6 The Decomposition of Keratin by Microorganisms	55
I.7 The Supercontraction of Keratin Fibers by Lithium Bromide	59
<b>II. Serum Protein</b>	
II.1 Some Chemical Properties of the Sulfhydryl Group in Bovine Plasma Albumin	75
II.2 Relative Probabilities of Isomers in Cystine-Containing Randomly Coiled Polypeptides	93
II.3 Biogenesis of Protein Fibers: The Clotting of Blood Plasma	109
<b>III. Iron and Copper Proteins</b>	
III.1 The Role of Sulfur in Some Metal-Proteins	127
III.2 The Role of Sulfur in Cytochrome c	141
III.3 The Cystine/Cysteine Content of Hemoglobins	153
III.4 Sulfhydryl Groups and the Oxygenation of Hemoglobin	173
III.5 Relation of Iron to Sulfhydryl Groups in Ferritin	189
<b>IV. Enzymes</b>	
IV.1 Some Aspects of protein Structure in Relation to the Role of –SH and –S–S– Groups in Enzymic Catalysis	199
IV.2 Mechanism of Action of Alcohol Dehydrogenases from Yeast and Liver and B-Galactosidase of E. coli	215
IV.3 Determination and Properties of Sulfhydryl Groups in Yeast Alcohol Dehydrogenates	245
IV.4 Fluorometric Analysis of Coenzyme Binding and Thiol Interactions on Glyceraldehyde-3-phosphate and Lactic Dehydrogenases	267
IV.5 On the Order of Disulfide Bond Reduction in Ribonuclease	279

<b>V. Muscle Proteins</b>	
V.1 Cysteine and Cystine Content of Muscle Proteins Fractions	291
V.2 The Role of SH Groups in the Interaction of Myosin with Phosphate Compounds and with Actin	297
V.3 Studies o the Functional Sulfhydryl Groups of Myosin and Actin	317
<b>VI. Viruses</b>	
VI.1 The Masked –SH Group in Tobacco Virus Protein	339
VI.2 Structure and Function in T2 Bacteriophage	347
<b>VII. Cell Division</b>	
VII.1 The Role of Thiol Groups in the Structure and Function of the Mitotic Apparatus	367
VII.2 Multiple Functions of Sulfur Mitosis	391
VII.3 Function of Protein Disulfide Reductase in Cellular Division of Yeasts	409
<b>VIII. Summery</b>	
VIII.1 Summary	427
AUTHOR INDEX	443
SUBJECT INDEX	453