## CONTENTS

Conferences Lecture	11
The configuration of Polypeptide Chains in Proteins	11
Session 1: Structure, Properties and Origin of Animal Connective Tissue	
Introduction	15
The Structure of collagen	20
The Structure of Collagen in relation to Chemical Composition and Physicochemical	
Properties	25
Modification of Collagen and Gelatin by Chemical Reagents	32
The Relationship of Reticulin to other "Collagens"	38
The Structural Periodicity of Microscopic Collagen Fibres	45
The Biogenesis of Collagen	50
Aspects of the Biosynthesis of Collagen	54
Collagen and the Mechanical Properties of Tissues	58
On the position of Aldehydes in the Collagen Molecule	62
Session 2: Part 1 : Soluble Collagens and Molecular Weight, Shape and Structure for Gelatins	
Introduction	69
The Extraction of Soluble Protein from Skin by Alkaline Solutions	71
Some Chemical and Physical Properties of Ichthyocol	76
Some Observations on the Oxidation of Ichthyocol and Its Derived Gelatin	82
Physicochemical Nature of Procollagen	87
The Molecular Properties and Thermal Stability of Soluble Collagens	92
Evidence for Multi-chain Gelatin Molecules	100
Sedimentation Analysis of some Plasma Extender Gelatins	106
Session 2 : Part 2 : Synthetic Polypeptides	
Introduction	115
The Physical-Chemical Properties of High Molecular Weight Poly-L-proline	122
Polymers and Copolymers of Proline and Hydroxyproline	131
Session 3 : Conversion of Collagen to Gelatin, and Chemical Composition	
Introduction	137
The Influence of the Mode of Preparation on the Physical Properties of Gelatin	140
The Hydrogen Bond in the Collagen-Gelatin Transformation	145
The Conversion of Collagen to Gelatin by the Acid Process	149
Acid – Precursor gelatins : Structure an dSignificance in the Collage-Gelatin Transition	
Process	155
Degradation of Ichthyocol by Bacterial Collagenase	164
The use of Ion-Exchange Resins in Structural studies on Proteins	170
A Survey of Recent Work on the Amino Acid Composition of Vertebrate Collagen and	172
Gelatin Amine Anid Communities of Instants Collegence	1/3
Amino Acid Composition of Invertebrate Collagens	1/9
Session 4 : Chemical and Physical Properties of Gelatin and Glue	100
Introduction	183
I ne $N$ -and $C = 1$ erminal Amino Acids of Gelatin	186
Reactions of Gelatin with certain Bifunctional Reagents	191
The rhysical Properties of Gelaun and its Degradation Products Demarks on the Melecular Drocesses of Colotin Col Fermation	19/
The Propagation of Illtrasonic Ways in Sols and Colo	204
The Propagation of Offiasonic waves in Sols and Gels	209

The Molecular Weight Gel rigidity and Guanidino Group Content of Gelatins and Guanidated Gelatins and the Setting Rate of Their Sols	214
Session 5 : Relation of Properties to Uses	
Introduction	219
A Polarographic Investigation of a Polypeptide Impurity from Gelatine	221
The Guanidino Side Chains and the Protective Colloid Actionof Gelatin	225
The Emulsion Stabilizing Properties of Gelatine	231
Formation of Intermolecular Bridges by hardening Gelatin Comparison of	
Results obtained with Aldehydes and Chrome Alum	236
Tanning of Gelatin Monolayers	243
Chemical Modifications of Gelatin for use as Plasma Expander	246
Conference Note	
Hydroxyproline and the Hydrothermal Stability of Collagens	253
Polarized Infra-red Spectra for collagen	254
Elastin-like Structures from Collagen	255
Changes in Physical Properties of the Cervix after Parturition	256
Physical Properties of Mucoprotein from Cartilage	259
The Mild Oxidation of Limed Collagen by Periodate	259
Peptides Produced from Ichthyocol by Collagenase	260
The $\alpha$ and $\beta$ Components of ichthyocol	261
Sonic Degradation of Soluble Calf-skin Collagen	262
On the Isoionic and Isoelectric Points of Limed and native Collagens	262
Isoionic Point for Acid Process Gelatin	265
Evidence that some Gelatin Molecules bear no Terminal Carboxyl Groups	265
Evidence from Titration Curves in support of the N-Terminal values of Courts and	
Stainsby	266
Optical Rotatoy Dispersion fo rGelatin Films and gels	267
The Electrophoretic Mobility of a Copolymer	268
The Optical Rotation of Gelatin in Mixed Solvents	269
Rotatory Dispersion of Degraded Ichthyocol	269
Hydrogen Bonding and poly-L-hydroxyproline	270
Effects of Urea and Thiocyanate on Poly-L-proline II	271
Deguanidated Gelatin	271
The Setting of Gelatin Sols	272
Subject Index	275