

## CONTENTS

### SECTION I.

#### THE PHYSIOLOGY OF MUSCLE AND NERVE.

CHAPTER I. THE PHENOMENON OF CONTRACTION	17
CHAPTER II. CHEMISTRY OF MUSCLE. THE CHEMICAL CHANGES OF CONTRACTION AND RIGOR. THEORIES OF MUSCULAR CONTRACTION. EXERCISE AND STRAIN	66
CHAPTER III. THE PHENOMENON OF CONDUCTION. PROPERTIES OF THE NERVE FIBER	87
CHAPTER IV. THE ELECTRICAL PHENOMENA SHOWN BY NERVE AND MUSCLE	108
CHAPTER V. THE NATURE OF THE NERVE IMPULSE AND THE NUTRITIVE RELATIONS OF NERVE FIBER AND NERVE CELL	116

### SECTION II.

#### THE PHYSIOLOGY OF THE CENTRAL NERVOUS SYSTEM.

CHAPTER VI. STRUCTURE AND GENERAL PROPERTIES OF THE NERVE CELL	136
CHAPTER VII. REFLEX ACTIONS	147
CHAPTER VIII. THE SPINAL CORD AS PATH OF CONDUCTION	170
CHAPTER IX. THE GENERAL PHYSIOLOGY OF THE CEREBRUM AND ITS MOTOR FUNCTIONS	190
CHAPTER X. THE SENSE AREAS AND THE ASSOCIATION AREAS IN THE CORTEX	215
CHAPTER XI. THE FUNCTIONS OF THE CEREBELLUM, THE PONS, AND THE MEDULLA	245
CHAPTER XII. THE SYMPATHETIC OR AUTONOMIC NERVOUS SYSTEM	261
CHAPTER XIII. THE PHYSIOLOGY OF SLEEP	271

### SECTION III.

#### THE SPECIAL SENSES.

CHAPTER XIV. CLASSIFICATION OF THE SENSES AND GENERAL STATEMENTS	282
CHAPTER XV. CUTANEOUS AND INTERNAL SENSATIONS	290
CHAPTER XVI. SENSATIONS OF TASTE AND SMELL	307
CHAPTER XVII. THE EYE AS AN OPTICAL INSTRUMENT DIOPTRICS OF THE EYE	319
CHAPTER XVIII. THE PROPERTIES OF THE RETINA. VISUAL STIMULI AND VISUAL SENSATIONS	349
CHAPTER XIX. BINOCULAR VISION	382
CHAPTER XX. THE EAR AS AN ORGAN FOR SOUND SENSATIONS	399
CHAPTER XXI. FUNCTIONS OF THE SEMICIRCULAR CANALS AND THE VESTIBULE	423

### SECTION IV.

#### BLOOD AND LYMPH.

CHAPTER XXII. GENERAL PROPERTIES OF BLOOD. PHYSIOLOGY OF	
--	--

THE CORPUSCLES	435
CHAPTER XXIII. CHEMICAL COMPOSITION OF THE BLOOD PLASMA; COAGULATION; QUANTITY OF BLOOD; REGENERATION AFTER HEMORRHAGE	473
CHAPTER XXIV. COMPOSITION AND FORMATION OF LYMPH	498
SECTION V.	
PHYSIOLOGY OF THE ORGANS OF CIRCULATION OF THE BLOOD AND LYMPH	
CHAPTER XXV. THE VELOCITY AND PRESSURE OF THE BLOOD FLOW	507
CHAPTER XXVI. THE PHYSICAL FACTORS CONCERNED IN THE PRODUCTION OF BLOOD-PRESSURE AND BLOOD-VELOCITY	537
CHAPTER XXVII. THE PULSE	548
CHAPTER XXVIII. THE HEART BEAT	561
CHAPTER XXIX. THE CAUSE OF THE HEART BEAT. PROPERTIES OF THE HEART MUSCLE	595
CHAPTER XXX. THE CARDIAC NERVES AND THEIR PHYSIOLOGICAL ACTION	609
CHAPTER XXXI. THE RATE OF THE HEART BEAT AND ITS VARIATIONS UNDER NORMAL CONDITIONS	626
CHAPTER XXXII. THE VASOMOTOR NERVES AND THEIR PHYSIOLOGICAL ACTIVITY	634
CHAPTER XXXIII. THE VASOMOTOR SUPPLY OF THE DIFFERENT ORGANS	656
SECTION VI.	
PHYSIOLOGY OF RESPIRATION.	
CHAPTER XXXIV. HISTORICAL STATEMENT. THE ORGANS OF EXTERNAL RESPIRATION AND THE RESPIRATORY MOVEMENTS	676
CHAPTER XXXV. THE PRESSURE CONDITIONS IN THE LUNGS AND THORAX AND THEIR INFLUENCE UPON THE CIRCULATION	698
CHAPTER XXXVI. THE CHEMICAL AND PHYSICAL CHANGES IN THE AIR AND THE BLOOD CAUSED BY RESPIRATION	707
CHAPTER XXXVII. INNERVATION OF THE RESPIRATORY MOVEMENTS	730
CHAPTER XXXVIII. THE INFLUENCE OF VARIOUS CONDITIONS UPON THE RESPIRATION	748
SECTION VII.	
PHYSIOLOGY OF DIGESTION AND SECRETION.	
CHAPTER XXXIX. MOVEMENTS OF THE ALIMENTARY CANAL	758
CHAPTER XL. GENERAL CONSIDERATION OF THE COMPOSITION OF THE FOOD AND THE ACTION OF ENZYMES	783
CHAPTER XLI. THE SALIVARY GLANDS AND THEIR DIGESTIVE ACTION	798
CHAPTER XLII. DIGESTION AND ABSORPTION IN THE STOMACH	815
CHAPTER XLIII. DIGESTION AND ABSORPTION IN THE INTESTINES	837
CHAPTER XLIV. PHYSIOLOGY OF THE LIVER AND SPLEEN	864

CHAPTER XLV. THE KIDNEY AND SKIN AS EXCRETORY ORGANS	887
CHAPTER XLVI. SECRETION OF THE DUCTLESS GLANDS INTERNAL SECRETION	927
SECTION VIII.	
NUTRITION AND HEAT PRODUCTION AND REGULATION.	
CHAPTER XLVII. GENERAL METHODS. HISTORY OF THE PROTEIN FOOD.	
VITAMINS	965
CHAPTER XLVIII. NUTRITIVE HISTORY OF CARBOHYDRATES AND FATS	992
CHAPTER XLIX. NUTRITIVE VALUE OF THE INORGANIC SALTS AND THE ACCESSORY	
ARTICLES OF DIET	1007
CHAPTER L. EFFECT OF MUSCULAR WORK AND TEMPERATURE ON BODY	
METABOLISM; HEAT ENERGY OF FOODS; DIETETICS	1021
CHAPTER LI THE PRODUCTION OF HEAT IN THE BODY; ITS MEASUREMENT AND	
REGULATION; BODY TEMPERATURE; CALORIMETRY; PHYSIOLOGICLA	
OXIDATIONS	1037
SECTION IX.	
PHYSIOLOGY OF REPRODUCTION.	
CHAPTER LII. PHYSIOLOGY OF THE FEMALE REPRODUCTIVE ORGANS	1062
CHAPTER LIII. PHYSIOLOGY OF THE MALE REPRODUCTIVE ORGANS	1086
CHAPTER LIV. HEREDITY; DETERMINATION OF SEX; GROWTH AND SENESENCE	1093
APPENDIX.	
I. PROTEINS AND THEIR CLASSIFICATION	1113
II. DIFFUSION AND OSMOSIS	1121
III. TABLE SHOWING DISTRIBUTION OF VITAMINS IN FOODS	1126
INDEX	1129