



EMBRYOLOGY.

The Animal Cell		Development of Embryo from Inner Cell-	
Cytoplasm	17	<i>mass</i>	37
Nucleus	18	The Neural Groove and Tube	42
The Ovum	20	The Primitive Segments or Somites	43
The Spermatozoön	22	The Early Growth of the Embryo	44
Fertilization of the Ovum	24	The Branchial Region	45
Segmentation of the Fertilized Ovum	25	Development of the Body Cavities	52
Implantation or Imbedding of Ovum	26	Development of the Cerebrospinal Spaces	55
Fetal Membranes and Placenta	27	The Growth of the Embryo	56

OSTEOLOGY.

Development of the Skeleton	59	The Facial Bones.	
BONE.		The Nasal Bones	160
Structure and Physical Properties	66	The Maxillæ (Upper Jaw)	162
Ossification	70	The Lacrimal Bone	168
THE VERTEBRAL COLUMN.		The Zygomatic Bone	168
General Characteristics of a Vertebra	75	The Palatine Bone	170
The Cervical Vertebrae	76	The Inferior Nasal Concha	173
The Thoracic Vertebrae	81	The Vomer	174
The Lumbar Vertebrae	83	THE EXTREMITIES.	
The Sacral and Coccygeal Vertebrae	85	The Bones of the Upper Extremity.	
Ossification of the Vertebral Column	90	The Clavicle	175
The Vertebral Column as a Whole	93	The Scapula	178
THE THORAX.	95	The Humerus	183
The Sternum	97	The Ulna	189
The Ribs	101	The Radius	194
The Costal Cartilages	105	The Hand.	196
THE SKULL.		The Carpus	196
The Exterior of the Skull	106	The Metacarpus	202
The Interior of the Skull	119	The Phalanges of the Hand	205
Differences in the Skull Due to Age	125	The Bones of the Lower Extremity.	
Sex Differences, Function and Cleft		The Hip Bone	206
Palate	127	The Ilium	206
The Mandible (Lower Jaw)	127	The Ischium	209
The Hyoid Bone	133	The Pubis	211
The Cranial Bones.		The Acetabulum	212
The Occipital Bone	134	The Pelvis	213
The Parietal Bone	138	The Femur	217
The Frontal Bone	141	The Patella	230
The Temporal Bone	143	The Tibia	231
The Sphenoid Bone	152	The Fibula	235
Ethmoid Bone	157	The Foot.	237
Sutural Bones	160	The Tarsus	237
		The Metatarsus	247
		The Phalanges of the Foot	250
		Comparison of the Bones of the Hand	
		and Foot	251
		The Sesamoid Bones	252

JOINTS AND LIGAMENTS.

Development of the Joints	255	Costovertebral Articulations	275
Classification of Joints	260	Articulations of the Heads of the Ribs	275
The Kinds of Movement Admitted in Joints	262	Costotransverse Articulations	277
ARTICULATIONS OF THE TRUNK.		Sternocostal Articulations	278
Articulations of the Vertebral Column	263	Articulation of the Sternum	280
Articulations of Vertebral Bodies	263	Mechanism of the Thorax	281
Articulations of Vertebral Arches	266	Articulation of the Vertebral Column with	
Articulation of the Atlas with the Epistropheus or Axis	268	the Pelvis	282
Articulations of the Vertebral Column with the Cranium	272	Articulations of the Pelvis	282
Articulation of the Mandible	273	Mechanism of the Pelvis	287
		ARTICULATIONS OF THE UPPER EXTREMITY.	
		Sternoclavicular Articulation	289

Acromioclavicular or Scapuloclavicular Articulation	291	Intermetacarpal Articulations	309
The Ligaments of the Scapula	292	Metacarpophalangeal Articulations	309
Humeral Articulation or Shoulder-joint	293	Articulations of the Digits	311
Elbow-joint	297	ARTICULATIONS OF THE LOWER EXTREMITY.	
Radioulnar Articulations	301	Coxal Articulation or Hip-joint	311
Radiocarpal Articulation or Wrist-joint	303	The Knee-joint	317
Intercarpal Articulations	306	Articulations between the Tibia and Fibula	325
Articulations of the Proximal Row of Carpal Bones	306	Talocrural Articulation or Ankle-joint	327
Articulations of the Distal Row of Carpal Bones	306	Intertarsal Articulations	330
Articulations of the Two Rows of Carpal Bones with Each Other	307	Tarsometatarsal Articulations	336
Carpometacarpal Articulations	308	Intermetatarsal Articulations	336
		Metatarsophalangeal Articulations	337
		Articulations of the Digits	338
		Arches of the Foot	338

MUSCLES and FASCIE

Development of the Muscles	341	THE MUSCLES AND FASCIE OF THE UPPER EXTREMITY.	
Structure of Muscle	343	The Muscles Connecting the Upper Extremity to the Vertebral Column	
Connective Tissues	345		422
Tendons, Aponeuroses, Fasciæ	346	The Muscles Connecting the Upper Extremity to the Anterior and Lateral Thoracic Walls	
Muscle Action	351		426
THE MUSCLES AND FASCIE OF THE HEAD.		The Muscles and Fasciæ of the Shoulder	431
The Facial Muscles	352	The Muscles and Fasciæ of the Arm	434
The Muscles of Mastication	361	The Muscles and Fasciæ of the Forearm	
THE MUSCLES AND FASCIE OF THE ANTERO-LATERAL REGION OF THE NECK.		The Volar Antibrachial Muscles	438
The Superficial Cervical Muscle	364	The Dorsal Antibrachial Muscles	444
The Cervical Fasciæ	365	The Muscles and Fasciæ of the Hand	449
The Lateral Cervical Muscles	371	The Thenar Muscles	459
The Suprahyoid Muscles	371	The Hypothenar Muscles	461
The Infrahyoid Muscles	374	The Intermediate Muscles	462
The Anterior Vertebral Muscles	375	THE MUSCLES AND FASCIE OF THE LOWER EXTREMITY.	
The Lateral Vertebral Muscles	376	The Muscles and Fasciæ of the Iliac Region	
THE MUSCLES AND FASCIE OF THE TRUNK.			464
The Deep Muscles of the Back	377	The Muscles and Fasciæ of the Thigh	466
The Suboccipital Muscles	384	The Anterior Femoral Muscles	469
The Muscles of the Thorax	386	The Medial Femoral Muscles	471
The Muscles and Fasciæ of the Abdomen	392	The Muscles of the Gluteal Region	473
The Antero-lateral Muscles of the Abdomen	392	The Posterior Femoral Muscles	479
The Posterior Muscles of the Abdomen	406	The Muscles and Fasciæ of the Leg	480
The Muscles and Fasciæ of the Pelvis	407	The Anterior Crural Muscles	480
The Muscles and Fasciæ of the Perineum	411	The Posterior Crural Muscles	483
The Muscles of the Urogenital Region in the Male	417	The Lateral Crural Muscles	487
The Muscles of the Urogenital Region in the Female	419	The Fasciæ Around the Ankle	489
Muscles of the Anal Region	421	The Muscles and Fasciæ of the Foot	491
		The Dorsal Muscle of the Foot	491
		The Plantar Muscles of the Foot	491

THE BLOOD-VASCULAR SYSTEM.

DEVELOPMENT OF THE VASCULAR SYSTEM		THE HEART	
The Development of the Heart	504	The Thoracic Cavity	527
Further Development of the Arteries	509	The Pericardium	528
Further Development of the Veins	515	Structure of the Pericardium	528
STRUCTURE OF BLOOD VESSELS.		The Heart	530
Structure of Arteries	521	Component Parts	531
Capillaries	522	Cardiac Muscular Tissue	544
Structure of Veins	524	Peculiarities in the Vascular System of the Fetus.	
The Blood	525	Fetal Circulation	546
Red Corpuscles or Erythrocytes	525	Changes in the Vascular System at Birth	548
White Corpuscles or Leucocytes	525		

THE ARTERIES.

The Pulmonary Artery	553	THE ARTERIES OF THE UPPER EXTREMITY.	
The Aorta	553	The Subclavian Artery	580
THE ARTERIES OF THE HEAD AND NECK.		The Axillary Artery	590
The Common Carotid Artery	557	The Brachial Artery	595
The External Carotid Artery	559	The Radial Artery	598
The Internal Carotid Artery	570	The Ulnar Artery	602
The Arteries of the Brain	579	THE ARTERIES OF THE TRUNK.	
		The Descending Aorta	
		The Thoracic Aorta	605

The Abdominal Aorta	608	The Popliteal Artery	638
The Common Iliac Arteries	619	The Anterior Tibial Artery	641
The Hypogastric Artery	620	The Arteria Dorsalis Pedis	642
The External Iliac Artery	628	The Posterior Tibial Artery	643
THE ARTERIES OF THE LOWER EXTREMITY.			
The Femoral Artery	630		

THE VEINS.

THE PULMONARY VEINS	650	The Veins of the Upper Extremity and Thorax—	
THE SYSTEMIC VEINS—		The Deep Veins of the Upper Extremity	671
The Veins of the Heart	650	The Veins of the Thorax	673
The Veins of the Head and Neck		The Superior Vena Cava	674
The Veins of the Exterior of the Head and Face	652	The Veins of the Vertebral Column	676
The Veins of the Neck	654	The Veins of the Lower Extremity, Abdomen, and Pelvis	678
The Diploic Veins	659	The Superficial Veins of the Lower Extremity	678
The Veins of the Brain	660	The Deep Veins of the Lower Extremity	681
The Sinuses of the Dura Mater	661	The Veins of the Abdomen and Pelvis	682
The Emissary Veins	668	The Inferior Vena Cava	685
THE VEINS OF THE UPPER EXTREMITY AND THORAX		THE PORTAL SYSTEM OF VEINS.	
The Superficial Veins of the Upper Extremity	668	The Portal Vein	688

THE LYMPHATIC SYSTEM.

The Development of the Lymphatic Vessels	693	THE LYMPHATICS OF THE ABDOMEN AND PELVIS.	
Lymphatic Capillary Plexuses	694	The Lymph Nodes of the Abdomen and Pelvis	714
Lymphatic Vessels	697	The Lymphatic Vessels of the Abdomen and Pelvis	717
Structure of Lymphatic Vessels	698	The Lymphatic Nodes of the Abdominal and Pelvic Viscera	717
The Lymph Nodes	698	The Lymphatic Vessels of the Abdominal and Pelvic Viscera	721
THE THORACIC DUCT	700	THE LYMPHATICS OF THE THORAX.	
The Right Lymphatic Duct	702	The Parietal Lymph Nodes	726
THE LYMPHATICS OF THE HEAD, FACE, AND NECK.		The Lymphatic Vessels of the Thoracic Wall	728
The Lymph Nodes of the Head	702	The Lymphatic Vessels of the Thoracic Viscera	730
The Lymphatic Vessels of the Head	704	THE SPLEEN	730
The Lymph Nodes of the Neck	707	Development	731
The Lymphatic Vessels of the Neck	709	Structure	732
THE LYMPHATICS OF THE UPPER EXTREMITY.		THE THYMUS	
The Lymph Nodes of the Upper Extremity	710	Development of the Thymus	734
The Lymphatic Vessels of the Upper Extremity	711	Structure of the Thymus	735
THE LYMPHATICS OF THE LOWER EXTREMITY.			
The Lymph Nodes of the Lower Extremity	712		
The Lymphatic Vessels of the Lower Extremity	713		

NEUROLOGY.

Development of the Nervous System	737	Composition and Central Connections of the Spinal Nerves	876
Histology of the Nervous System	755	Composition and Central Connections of the Cranial Nerves	881
THE CENTRAL NERVOUS SYSTEM		Pathways from the Brain to the Spinal Cord	898
The Medulla Spinalis or Spinal Cord	767	The Motor Tract	898
Enlargements - Fissures and Sulci	769	Meninges of the Brain and Medulla Spinalis	
The Internal Structure of the Medulla Spinalis	770	The Dura Mater	901
Roots of the Spinal Nerves	782	The Arachnoid	903
THE ENCEPHALON OR BRAIN.	784	The Pia Mater	906
The Medulla Oblongata	785	The Cerebrospinal Fluid	907
The Pons	803	THE PERIPHERAL NERVOUS SYSTEM.	
The Cerebellum	807	THE CRANIAL NERVES.	
The Fourth Ventricle	814	The Olfactory Nerve	911
The Mid-brain or Mesencephalon	817	The Optic Nerve	912
The Fore-brain or Prosencephalon	824	The Oculomotor Nerve	913
The Diencephalon	825	The Trochlear Nerve	914
The Telencephalon	840	The Trigeminal Nerve	
The Cerebral Hemispheres	840	The Semilunar Ganglion	915
The Rhinencephalon	854	The Ophthalmic Nerve	916
Basal Ganglia	859	The Maxillary Nerve	918
Structure of Cerebral Cortex	868	The Mandibular Nerve	923
		The Abducent Nerve	929

The Facial Nerve	930	THE AUTONOMIC NERVOUS SYSTEM:	997
The Acoustic Nerve	935	The Cranial Outflow	1001
The Glossopharyngeal Nerve	936	The Sacral Outflow	1004
The Vagus Nerve	938	The Thoracolumbar Outflow	1004
The Accessory Nerve	942	Connections with the Spinal Nerves	1006
The Hypoglossal Nerve	943		
THE SPINAL NERVES	946	THE SYMPATHETIC SYSTEM	
Nerve Roots	948	The Cephalic Portion	1008
Divisions of the Spinal Nerves	950	The Cervical Portion	1009
Posterior Rami of the Spinal Nerves	950	The Thoracic Portion	1012
Anterior Rami of the Spinal Nerves	954	The Abdominal Portion	1013
The Cervical Nerves	954	The Pelvic Portion	1013
The Cervical Plexus	954	The Great Plexuses	1014
The Brachial Plexus	959	The Cardiac Plexus	1015
The Thoracic Nerves	973	The Celiac Plexus	1016
The Lumbosacral Plexus	977	The Hypogastric Plexus	1019
The Lumbar Nerves	977		
The Lumbar Plexus	978		
The Sacral and Coccygeal Nerves	986		
The Sacral Plexus	986		

THE ORGANS OF THE SENSES.

THE PERIPHERAL ORGANS OF THE SPECIAL SENSES.		The Organ of Sight—	
The Organ of Taste.		The Accessory Organs of the Eye—	
Structure	1023	The Ocular Muscles	1051
Nerves of Taste	1024	The Eyebrows	1055
The Organ of Smell.		The Eyelids	1055
The External Nose	1024	The Tarsal Glands	1056
The Nasal Cavity	1026	The Conjunctiva	1056
The Accessory Sinuses of the Nose	1030	The Lacrimal Apparatus	1058
The Organ of Sight.		The Organ of Hearing.	
Development	1032	The Development of the Ear	1060
The Tunics of the Eye	1037	The External Ear	1064
The Fibrous Tunic	1037	The Middle Ear or Tympanic Cavity	1068
The Vascular Tunic	1040	The Auditory Ossicles	1074
The Retina	1045	The Internal Ear or Labyrinth	1078
The Refracting Media	1049	The Osseous Labyrinth	1078
The Accessory Organs of the Eye	1051	The Membranous Labyrinth	1082
		PERIPHERAL TERMINATIONS OF NERVES OF GENERAL SENSATIONS	1090

THE COMMON INTEGUMENT.

Development	1096	The Appendages of the Skin.	
Structure	1096	The Nails	1101
The Epidermis	1096	Hairs	1102
The Corium	1098	The Sebaceous Glands	1104
Cleavage Lines (Langer's)	1100	The Sudoriferous or Sweat Glands	1104

THE RESPIRATORY APPARATUS.

Development	1107	The Trachea and Bronchi	1121
The Larynx	1108	The Pleuræ	1124
The Cartilages of the Larynx	1109	The Mediastinum	1127
The Ligaments of the Larynx	1112	The Lungs	1129
Interior of the Larynx	1114	Bronchopulmonary Segments	1133
Muscles of the Larynx	1118	Structure of the Lungs	1136

THE DIGESTIVE APPARATUS.

The Development of the Digestive Tube.	1141	The Esophagus	1187
The Mouth.		The Abdomen	1189
The Mouth Cavity Proper	1151	The Peritoneum	1194
The Teeth	1156	Main Peritoneal Cavity	1200
The Tongue	1165	Omental Bursa	1200
The Salivary Glands	1172	The Omenta	1202
The Parotid Gland	1172	The Mesenteries	1202
The Submaxillary Gland	1175	The Peritoneal Recesses or Fossæ	1204
The Sublingual Gland	1175	The Stomach	1207
The Fauces	1177	The Small Intestine.	
The Palatine Tonsils	1177	The Duodenum	1213
The Muscles of the Palate	1180	Jejunum and Ileum	1216
The Pharynx	1182		
The Muscles of the Pharynx	1184		

The Large Intestine.
 The Cecum 1222
 The Vermiform Process or Appendix 1224
 The Colon 1225
 The Rectum 1227

THE LIVER
 Anatomy 1233
 Development 1238
 Structure 1239
 Excretory Apparatus of the Liver 1242

The Liver—
 Excretory Apparatus of the Liver—
 The Hepatic Duct 1242
 The Gall-bladder 1243
 The Cystic Duct 1243
 The Common Bile Duct 1244

THE PANCREAS
 Anatomy. 1244
 The Pancreatic Duct 1247
 Development 1248
 Structure 1248

THE UROGENITAL SYSTEM.

DEVELOPMENT OF THE URINARY AND GEN-
 ERATIVE ORGANS.
 The Pronephros and Wolffian Duct 1253
 The Mesonephros, Müllerian Duct, and
 Genital Gland 1254
 The Ovary 1257
 The Testis 1258
 Descent of the Testes 1258
 The Metanephros and the Permanent
 Kidney 1260
 The Urinary Bladder 1261
 The External Organs of Generation 1262

THE MALE GENITAL ORGANS.
 The Testes and their Coverings 1286
 Structure 1293
 The Ductus Deferens 1296
 The Vesiculæ Seminales 1297
 The Ejaculatory Ducts 1298
 The Penis 1298
 Structure 1302
 The Prostate 1303
 The Bulbourethral Glands. 1305

THE URINARY ORGANS.
 The Kidneys 1264
 Anatomy 1264
 General Structure of the Kidney 1270
 Minute Anatomy 1272
 The Ureters 1275
 The Urinary Bladder 1277
 Structure 1282
 The Male Urethra 1284
 The Female Urethra 1286

THE FEMALE GENITAL ORGANS.
 The Ovaries 1305
 Structure 1307
 The Uterine Tube 1308
 The Uterus 1310
 Supports 1313
 Structure 1314
 The Vagina 1316
 The External Genital Organs 1317
 The Mammary 1319

THE DUCTLESS GLANDS.

The Thyroid Gland 1327
 The Parathyroid Glands 1330
 The Hypophysis Cerebri 1331
 The Pineal Body 1335

The Chromaphil and Cortical Systems.
 Development 1335
 The Suprarenal Glands 1336
 Glomus Coccygeum 1339

SURFACE AND TOPOGRAPHICAL ANATOMY.

The Head and Neck 1343
 The Cranium 1348
 The Face 1353
 The Eye 1357
 The Ear 1357
 The Neck 1360
 The Triangles of the Neck 1362

The Back 1365
 The Thorax 1369
 The Abdomen 1379
 The Perineum 1392
 The Upper Extremity 1394
 The Lower Extremity 1410

INDEX TO BIBLIOGRAPHIES 1428

SUBJECT INDEX 1431