ATLAS *of* HUMAN ANATOMY

BARRY J. ANSON

AN ATLAS OF HUMAN ANATOMY

BY

BARRY J. ANSON, Ph.D.

Professor of Anatomy, Northwestern University Medical School

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PREFACE

During the progress of laboratory teaching it became the desire of the author to prepare an atlas of gross anatomy whose pictorial content would be based upon new dissections, serially prepared, and upon variable morphological features statistically presented. It was believed that such an atlas would be of service to students in medicine and to practitioners for whom illustrations must serve in substitution for actual specimens. The present volume represents the fruition of that long-term project.

In carrying out this undertaking the drawings were accurately prepared by the artists; they were neither warped to conform to preconceived, stereotyped concepts of human morphology, nor simplified to serve as transitory chartings for a laboratory excursion. Anomalies, as such, have been minimized; instead, unemphasized as individual aberrancies, they find their place as predictable elements in a natural succession of variations.

Nowadays, when the specialized textbooks of embryology, histology and neuroanatomy outnumber, in each category, the encyclopedic treatises on gross anatomy, there would seem to be no plausible excuse for burdening an atlas with illustrations or descriptive matter for which the student finds little or no immediate use in the dissection laboratory; therefore, with rare, and perhaps defensible, exceptions, the author has limited the contents of this volume to those features of human structure which are demonstrable in regular study of the cadaver. Such concentration was considered, on at least two counts, to represent an increasingly desirable scheme of treatment: first, because, in the face of shrinking curricular attention to gross anatomy, pictorial records become proportionately more important; second, because, with the student's early introduction to dispensary problems, dependable reminders of his dissection experience become indispensable elements of his developing clinical judgment.

In the course of teaching at graduate and postgraduate levels it became evident that no distinction could be drawn between the subject matter of a course for first-year students in medicine and that which, in the field of applied anatomy, would be acceptable to editors of journals and desired by officers of clinical societies at whose meetings the author was invited to speak. Therefore, the Atlas of Human Anatomy was prepared in such a way as to be continuously useful to the reader from his days as a novitiate through those in which his responsibilities as a doctor require a reference book based, not upon perennially copied figures, but upon the artists' unbiased portrayal of dissection.

Comparably, the author has been vitally dependent upon advice from students in all the curricular grades. Sophomores, serving as prosectors, juniors and seniors, acting as assistants, and graduates in medicine awaiting residency appointments, have aided in the preparation of dissections, and in selection of features which, in their judgment, warranted special emphasis. Their efforts frequently led them into programs of graduate study, in the prosecution of which colleagues in surgery, medicine and in several specialties offered guidance; publications accruing therefrom contain illustrations which, in many cases, have proved serviceable for inclusion in the Atlas.

Thus, it came about that, although the Atlas of Human Anatomy was originally envisaged as an undertaking whose completion might depend upon the labors of the illustrators and the author, the project soon became linked with programs of research chosen by graduate students in anatomy. Many of the studies have appeared in journals of the preclinical and clinical sciences. The journal articles are listed under Acknowledgements, hereinafter. Contributors are: Doctors Franklin L. Ashley, Lindsay E. Beaton, William E. Bishop, Bradley W. Carr, Earl W. Cauldwell, Henry C. Cleveland, Edmund J. Colton, Erwin J. Cummins, Edward H. Daseler, Jack Dykes, Edward W. Gibbs, William C. Hambley, Howard H. Lander, Richard E. Lininger, R. Yale Lyman, Lawrence J. McCormack, Joseph J. McDonald, Chester B. McVay, William L. Minear, Edward H. Morgan, James W. Pick, Arthur F. Reimann, George A.

Richardson, Robert G. Siekert, Harold V. Smith, LaVern L. Swigart, Robert R. Wright.

Equal recognition is owing to the following graduate students, whose investigations are currently being prepared for publication: Doctors Richard H. Bell, Myron B. Close, Richard A. Davis, Wallace H. Greig, Ronald G. Haley, Edward V. Johnston, Brace I. Knapp, John Martin, J. Watson Miller, Chester Moen, Thomas E. Richmond, John E. Sonneland, Royce D. Tebbet. From extensive series of drawings certain selected figures have been employed for illustration in the Atlas. The anatomical studies thus represented deal with the arterial supply of the large intestine and vermiform process, of the heart, thymus and thyroid gland, of the upper and lower extremities; with variations in the pattern of vertebral, subclavian, pancreatic, duodenal and coronary arteries; with variations in form and position of the duodenum, of the constituents of the pulmonary hilus, of the brachial plexus of nerves; with tributary schemes exhibited by the superficial veins of the neck, the cisterna chyli and the saphenous veins in the thigh and the leg; with variations in the venous sulci, vestibular aqueduct and subarcuate fossa of the temporal bone. Additionally, special thanks are owing to Dr. Lindsay E. Beaton, Dr. Arthur F. Reimann, Dr. J. Watson Miller and Dr. Sherman S. Coleman for preparing the extensive series of dissections of the skeletal musculature and of the vessels and nerves of the extremities and pelvis.

To all of the above-named associates, past and present, the author is deeply indebted; their scholarship, ability and zeal have shortened the writer's task, and association with them has converted an otherwise overwhelming task into a most agreeable endeavor.

With Dr. Arthur H. Curtis, now Professor Emeritus of Gynecology and Obstetrics, studies were published on female pelvic and perineal anatomy. All of the pertinent illustrations which appeared in this series were published in Dr. Curtis' Textbook of Gynecology; for the Atlas, these original drawings were engraved again, in atlas proportions, as were, also, virtually all of the drawings employed initially in journal articles. In the prosecution of other investigations the author benefitted by association with Dr. Emil D. W. Hauser, Associate Professor of Bone and Joint Surgery; Dr. John A. Wolfer, now Professor Emeritus of Surgery; Dr. W. Kenneth Jennings and Dr. J. Peerman Nesselrod, and Dr. Leo M. Zimmerman, formerly of Northwestern's Department of Surgery.

For the portion of the Atlas concerned with the anatomy of the organ of hearing, the illustrations were taken chiefly from the monograph, The Temporal Bone and the Ear, by Dr. Theodore H. Bast and the writer. The selected figures were redrawn for present use.

In the preparation of any volume dealing with the gross fabric of the human body, the degree of the illustrator's skill largely determines the extent of the author's success. Fortunately, in the preparation of the Atlas, the writer has been bountifully favored, since the drawings were executed by Mary Dixon Elder, Tom Jones, Willard C. Shepard, Lucille Cassell Innes and Jean McConnell. Much of the labelling was done by Rosamond Howland and Marion Mason Kohring.

Every form of courtesy and consideration which could be accorded an author by his publishers has been consistently extended by the W. B. Saunders Company. This relationship has been strengthened by the membership in the Company of Mr. Willard C. Shepard; his understanding of the publisher's problem, his material contribution to the list of illustrations and his knowledge of bookish affairs together constitute a three-fold advantage to the author.

Since the author has been permitted to reproduce numerous figures from the journals to which he has contributed papers, warm gratitude is felt toward the friendly editors of the journals named hereinafter under Acknowledgments, especially to Dr. Loyal Davis, Editor of Surgery, Gynecology and Obstetrics.

It is likely that the task of amassing a collection of drawings adequate to the requirements of a modern Atlas would not have been undertaken had it not been for the encouragement offered by Dr. Irving S. Cutter, late Dean of Northwestern University Medical School. This program was subsequently supported by President J. Roscoe Miller, and by Dean Richard H. Young.

BARRY J. ANSON

Chicago, Illinois

Acknowledgment to Journals

The following is a list of journal articles, published by the writer in co-authorship with his colleagues and former graduate students, from which certain of the illustrations in this volume have been borrowed. The engravings in the Atlas were prepared anew from the original drawings.

American Journal of Anatomy

The visceral branches of the abdominal aorta; topographical relationships. *73:*27–57, 1943.

American Journal of Physical Anthropology

Variations in the origin of arteries derived from the aortic arch in American whites and Negroes. *27:*91–107, 1940.

The hypogastric artery in American whites and Negroes. *28:*381–395, 1941.

American Journal of Roentgenology and Radium Therapy

The accessory pulmonary lobe of the azygos vein. A report of three cases. *35:*630–634, 1936.

Anatomical Record

The topographical positions and the mutual relations of the visceral branches of the abdominal aorta. A study of 100 consecutive cadavers. *67:*7–15, 1936.

The anatomy of the inguinal and hypogastric regions of the abdominal wall. *70:*211–225, 1938.

Fascial continuities in the abdominal perineal and femoral regions. *71:*401–407, 1938.

The fossa ovalis, and related blood vessels. *72:*399–404, 1938.

The pyramidalis muscle. *72:*405–411, 1938.

The relation of the median nerve to the pronator teres muscle. *75:*23–26, 1939.

Aponeurotic and fascial continuities in the abdomen, pelvis and thigh. *76:*213–231, 1940.

Composition of the rectus sheath. *77:*213–225, 1940.

The midpalmar compartment, associated spaces and limiting layers. *78:*25, 1940.

The inferior phrenic artery. Origin and suprarenal branches. *78:*413–427, 1940.

Vertebral level of termination of the spinal cord. With report of a case of sacral cord. *38:*127–138, 1944.

The palmaris longus muscle and tendon. A study of 1600 extremities. *89:*495–505, 1944.

The accessory tendon of the flexor pollicis longus muscle. *90:*83–87, 1944.

The vestigial valves and the interatrial foramen of the adult human heart. An anatomic study of 512 specimens. *100:*331–355, 1948.

Journal of Anatomy

The origin of the pectoralis minor. *82:*629–630, 1938.

Journal of Bone and Joint Surgery

The sciatic nerve and the piriformis muscle: their interrelation a possible cause of coccygodynia. *20:*686–688, 1938.

Journal of Urology

Variations in the number and arrangement of the renal vessels. A study of the blood-supply of four hundred kidneys. *36:*211–219, 1936.

The renal vascular pedicle. An anatomical study of 430 body-halves. *44:*411–434, 1940.

Anatomical relations of ectopic iliolumbar kidneys; bilateral in adult, unilateral in fetus. *49:*789–802, 1943.

Unilateral renal agenesis: anatomical description of a specimen. *50:*155–163, 1943.

Anatomy of pararenal veins. *60:*715–737, 1948.

Quarterly Bulletin of Northwestern University Medical School

The anatomy of the region of inguinal hernia. I. The parietal coverings of the round ligament of the uterus. *15:*32–38, 1941.

An anatomical consideration of the structures in the hepatic pedicle. A study of consecutive cadavers. *15:*103–109, 1941.

The anatomy of the region of inguinal hernia. II. The parietal coverings and related structures in indirect inguinal hernia in the male. *15:*114–121, 1941.

The anatomy of the region of inguinal hernia. IV. The internal surfaces of the parietal layers. *16:*20–37, 1942.

The arterial supply of the small intestine. *16:*114–122, 1942.

The anatomy of the region of inguinal hernia. V. The fundamental structure of the inguinal and scrotal layers, as demonstrated in cases of indirect inguinal hernia. *16:*150–154, 1942.

Mammary arteries. *16:*150–154, 1942.

The parietal intermuscular plexus of the thoracic nerves. *17:*209–216, 1943.

The extensor indicis proprius muscle: a study of 263 consecutive specimens. *17:*267–279.

Positions of abdominal viscera. *21:*154–155, 1947.

The pararenal vascular system. A study of 425 anatomical specimens. *21:*320–328, 1947.

Surgery, Gynecology and Obstetrics

The anomalous right subclavian artery. Its practical significance; with a report of three cases. *62:*708–711, 1936.

The anatomy of the pelvic and urogenital diaphragms, in relation to urethrocele and cystocele. *68:*161–166, 1939.

Blood supply of the mammary gland. *69:*468–473, 1939.

The anatomy of the subperitoneal tissues and ligamentous structures in relation to surgery of the female pelvic viscera. *70:*642–656, 1940.

Further studies in gynecological anatomy and related clinical problems. *74:*707–727, 1942.

A new method of repair for indirect inguinal hernia considered in reference to parietal anatomy. *74:*697–707, 1942.

Volvulus of the cecum. Anatomical factors in its etiology; report of a case. *74:*882–894, 1942.

The blood vessels of the female pelvis in relation to gynecological surgery. *75:*421–423, 1942.

The anatomy of the pelvic autonomic nerves in relation to gynecology. *75:*743–750, 1942.

Ventral hernia due to normal banding of the abdominal muscles. *78:*535–540, 1944.

The surgical anatomy of the facial nerve. *80:*620–630, 1945.

The fascia of the dorsum of the hand. *81:*327–331, 1945.

The saphenous venous tributaries and related structures in relation to the technique of high ligation. Based chiefly upon a study of 550 anatomical dissections. *82:*53–63, 1946.

The pelvic autonomic nerves in the male. *82:*598–608, 1946.

The structure of the calcaneal tendon (of Achilles) in relation to orthopedic surgery. With additional observations on the plantaris muscle. *83:*107–116, 1946.

The blood supply of the kidney, suprarenal gland, and associated structures. *84:*313–320, 1947.

The cystic artery and constituents of the hepatic pedicle. A study of 500 specimens. *85:*47–63, 1947.

The bronchial arteries. An anatomic study of 150 human cadavers. *86:*399–412, 1948.

Radical excision of the inguinal and iliac lymph glands; a study based upon 450 anatomical dissections and upon supportive clinical observations. *87:*679–694, 1948.

The anatomy of the hernial regions. I. Inguinal hernia. *89:*417–423, 1949.

The anatomy of the hernial regions. II. Femoral hernia. *89:*752–763, 1949.

The anatomy of the hernial regions. III. Obturator hernia and general considerations. *90:*31–38, 1950.

The esophageal arteries. An anatomic study of 500 specimens. *99:*234–243, 1950.

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