

## ***Books on Cardiac Surgery and Extracorporeal Circulation***

***“History is neither more nor less than biography on a large scale.”***

Alphonse de Lamartine (1790-1869) French author, poet, historian, and statesman

1960s

Glaser H. *The Miracle of Heart Surgery*. London: Lutterworth Press, 1961. [This book describes the intricacies of heart surgery in laymen’s terms. Included is a rarely seen photo of a screen oxygenator being assembled – making this hardback a true historical gem.]

Galletti PM, Brecher GA. *Heart-Lung Bypass; Principles and Techniques of Extracorporeal Circulation*. New York: Grune & Stratton, 1962. [This book was considered “the Bible” for early clinical perfusionists and was used as a didactic basis to train perfusionists on-the-job before formal schools were established. There are 20 chapters with superb original illustrations showing devices and circuit configurations. There is an excellent “Historical Milestones” section in the first chapter for background and a list of commonly used terminology. The Bibliography was extensive and listed all relevant citations, including several non-English publications, as collected by the authors up to 30 April 1961.]

McLeave H. *The Risk Takers; The Dramatic Story of Heart Surgery*. London: Frederick Muller Limited, 1962. [This book tells the stories of early cardiac surgeons (C. Walton Lillehei, Denis Melrose) their predecessors (Etienne Fallot, Ludwig Rehn, Werner Theodore Otto Forssmann), and the patients they operated on. There are photographs of the pioneers, operating room scenes, and early extracorporeal equipment, including an early model of the IBM-Gibbon heart-lung machine. As noted in the author’s introduction, “The final chapter of surgery is no more.” The last chapter speculates on cardiac transplantation. This book is remarkably thorough and easy to read.]

Gibbon JH Jr. (Ed.) *Surgery of the Chest, First Edition*. Philadelphia: WB Saunders, 1962. [In 1918, renowned German surgeon Ferdinand Sauerbruch, considered the “Father of Thoracic Surgery”, wrote the specialty’s first textbook. Nearly half a century later, John H. Gibbon, Jr., no less an authoritative voice on the subject, offers this comprehensive tome of chest disorders and treatment. The first 60 pages deal with cardiorespiratory dynamics and diagnostic tools such as spirometry, x-ray, and endoscopy. Chapters dedicated solely to diseases of the pleura, mediastinum, pericardium, thoracic aorta, and lung highlight the mid-section of the book. Not surprisingly, the developing field of open-heart surgery commands nearly a third of the content. Harris Shumacker presents a detailed review of

congenital heart disorders. Henry Swan discusses the history and acceptance of hypothermia as an adjunct to direct vision cardiac surgery. Accompanying John Kirklin's description of whole-body perfusion are marvelous photos of the Mayo-Gibbon pump oxygenator and the reusable heat exchanger. Ivan Brown deliberates on the combined use of hypothermia and extracorporeal circulation – a 40-page chapter replete with tables, diagrams, and schematics. A concluding chapter on myocardial revascularization features the enigmatic Beck operation, the Vineberg procedure, and coronary endarterectomy. Gibbon, known to perfusionists as the inventor of the heart-lung machine, pens five of the chapters himself – a testament to his immense knowledge and command of the cardiothoracic system.]

Brest AN (Ed.) *Heart Substitutes; Mechanical and Transplant*. Springfield, IL: Charles C. Thomas, 1966. [This book is divided into four parts, with one dedicated solely to extracorporeal circulation. Noted contributors include Drs. R. Camishion, F. Gollan, G. Clowes, P. Galletti, A. Senning, and C. Dennis.]

Amosoff N. *The Open Heart*. New York: Simon and Schuster, 1966. [The author, a Russian heart surgeon, weaves entries from his diary into a personal account of his experiences performing cardiac operations. A truly intimate and emotional read.]

Stofer RC. *A Technic for Extracorporeal Circulation*. Springfield, IL: Charles C. Thomas, 1968. [This monograph was written by a veterinarian and pioneering perfusionist at Stanford University Medical Center. It was dedicated to “All Heart-Lung Machine Technicians.” It describes in detail the methodology and equipment used under the direction of Dr. Norman Shumway. It was extensively illustrated with drawings and photographs. One chapter was entitled, “What Can Go Wrong”, and the last chapter poses several questions and answers as teaching aids.]

Richardson RG. *Surgery: Old and New Frontiers* (revised and enlarged edition of *The Surgeon's Tale*). New York: Charles Scribner's Sons, 1968. [This book chronicles all types of surgery from early times to the mid-1960s. There are chapters on cardiac surgery, which is characterized as the “youngest specialty.” There are many photographs of operating room scenes and pioneering surgeons. Like the later book (“The Scalpel and the Heart” published in 1970 by the author), this book contains a glossary, bibliography, and index of personal names making it useful for lay readers and those interested in medical history.]

Peirce EC II. *Extracorporeal Circulation for Open-Heart Surgery; Pathophysiology, Apparatus, and Methods including the Special Techniques of Hypothermia and Hyperbaric Oxygenation*. Springfield, IL: Charles C. Thomas, 1969. [The purpose of this monograph

was to provide “a practical introduction to the hardware, methods, and problems of perfusion for open-heart surgery.” While the author acknowledged the text was “biased in favor of his own experience” a secondary objective was “to establish a basis for judgment of new equipment and innovations in method.”]

Gibbon JH Jr., Sabiston DC Jr., Spencer FC (Eds.) *Surgery of the Chest*, Second Edition. Philadelphia: WB Saunders, 1969. [This second volume is more extensive in content than its predecessor. The undeniable growth in cardiac surgery, spawning new information, necessitated more contributing authors, more chapters, and the assistance of David Sabiston and Frank Spencer to skillfully edit the material. John Gibbon’s passion for thoracic surgery remains unmistakable – the first 22 chapters are dedicated to this craft, just like in the first edition. The discussion on hypothermia features detailed drawings of the perfusion and cardioplegia circuits, which aptly supplement the text. A brief statement on cardioplegic solution is also included. George Clowes’ overview of the extracorporeal circuit is magnificent. Photos and schematics, however, are scant in number and appropriateness. A new chapter, assisted circulation, written by Clarence Dennis, gives a mostly historical recount of circulatory support in all its forms. Sadly, the chapter concludes with the statement, “... *only the occasional patient is salvaged* ...”. Surgical approaches to valve disease and congenital defects are illustrated by irrefutable experts such as Denton Cooley, William Mustard, and Albert Starr. A substantial addition to this book is the section on myocardial revascularization. Owing to the CABG procedure’s enormous popularity, the information is substantial and fresh. Eugene Dong and Norman Shumway co-wrote the ending chapter on heart transplantation, a recent clinical reality of less than two years.]

Netter FH (artist), Yonkman FF (Ed.) *Heart*, Vol. 5, The Ciba Collection of Medical Illustrations; A Compilation of Paintings on the Normal and Pathologic Anatomy and Physiology, Embryology, and Diseases of the Heart. West Caldwell, NJ: CIBA-GEIGY Corp., 1969. [This extraordinary volume is one of 12 on human organ systems that was commissioned and published by a drug company. According to Wikipedia, Dr. Netter originally aspired to become an artist but was urged by his parents to pursue medicine—so he attended medical school and became a surgeon. However, his skill and remuneration as an illustrator led him to abandon the practice of medicine, and he became famous as “Medicine’s Michelangelo.” Before touching on the content of this book, there are two tributes in the opening pages—one from his wife who described him as a genius but a man of common characteristics in his daily routines; the second is in the Foreword written by C. Walton Lillehei, who commented on the growth of cardiac surgery and also considered Dr. Netter a genius. The artwork did not spring solely from Dr. Netter’s imagination, and there is an extensive list of contributors and consultants from whom he sought input for his

amazing renderings of the anatomy, physiology and pathophysiology, embryology, and congenital and acquired diseases of the heart. It's all here—from procedures in the cardiac catheterization laboratory to drugs to extracorporeal circulation and even heart transplantation. For those involved in perfusion in the early days, Netter's book was a fascinating glimpse into what the physicians were doing, especially when surgically treating the varieties of heart disease. There are three wonderfully illustrated pages describing the principles of extracorporeal circulation using a bag-type bubble oxygenator, rotating disc, and the Mayo-Gibbon "battery-type" screen oxygenator. While dated, this text ranks as a highly valued resource in anybody's library—provided you might be lucky enough to find a copy. There is an extensive list of selected references tied to specific plates in Dr. Netter's masterpiece and an index.]