



# *The Surgical Management of Pulmonary Tuberculosis*

*Edited by*

**JOHN D. STEELE, M.D.**

*Introduction by*

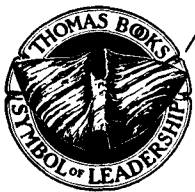
**FREDERICK A. COLLER, M.D.**

*Biographical Sketch of*

*John Alexander*

*By*

**CAMERON HAIGHT, M.D.**



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**Dedicated to the memory of**

**JOHN ALEXANDER**

**with the affection, admiration, and  
gratitude of the thoracic surgeons  
whom he trained**



JOHN ALEXANDER, M.D.  
1891-1954

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## John Alexander

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By CAMERON HAIGHT, M.D.  
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TO ONLY a few can the term pioneer be rightly applied; such a designation, however, can be accorded without reservation to Doctor John Alexander, Professor of Surgery and Surgeon-in-charge of the Section of Thoracic Surgery at the University of Michigan, to whom this monograph series is dedicated by his former residents. His entry into the field of thoracic surgery in its formative years provided him with the opportunity to participate in its growth into the recognized specialty which it is today. He was one of the first surgeons in this country to engage himself exclusively in thoracic surgery and his life was steadfastly dedicated to advancements in this specialty. His numerous contributions, particularly in the surgical treatment of pulmonary tuberculosis, have done much to improve the welfare of mankind.

Doctor Alexander was born in Philadelphia on February 24, 1891, the son of Mrs. Mazie Just Alexander and Lucien Hugh Alexander, a prominent lawyer of that city. He attended the Episcopal and Chestnut Hill Academies and was graduated from the University of Pennsylvania with the degrees of B.S. (1912), M.A. (1913), and M.D. (1916). He was a member of the varsity crew for four years and its captain during his last year in this activity. A glowing number of scholastic

achievements accrued to him during his medical school career. These included The Undergraduate Medical Association Prize in Anatomy, The Professor of Obstetrics Prize, The Frederick A. Packard Prize for the greatest proficiency in the course in Internal Medicine, and the Doctor Spencer Morris Prize for passing the best examination for the Degree of Doctor of Medicine. He also was President of the Undergraduate Medical School Association.

Shortly following his graduation from medical school, he enlisted with an American Unit in the French Army which had been formed by Dr. Joseph A. Blake and later, with the entry of the United States into World War I, he transferred to the Medical Corps of the United States Army. After the war he studied in Lyon with Leon Bérard, who at that time was employing surgery for patients with pulmonary tuberculosis. In recognition of his studies, he received a certificate in Surgery and Anatomy from the Université de Lyon in 1919.

For a year after his return to this country, Doctor Alexander served as assistant to Doctor Charles H. Frazier, Professor of Clinical Surgery at the University of Pennsylvania. In 1920 he was called to the University of Michigan as Instructor in Surgery. His tenure was soon interrupted



by illness which took him to Saranac Lake. Perhaps no more stimulating example of devotion to medical science and a will to overcome adversity can be shown than in his writing of the first English text on the surgical treatment of pulmonary tuberculosis. The need for a plaster body cast and the support of a Bradford frame were not deterrents. Not to be overcome by these physical handicaps, he developed a specially designed support for books which could hold them above his head for greater convenience. [See reference 9 of Dr. Alexander's bibliography. Ed.] This volume, *The Surgery of Pulmonary Tuberculosis* (1925) was the first attempt to summarize the results of others in this new field. It was dedicated to the belief that thousands of lives would be lost if surgery were not undertaken for patients with pulmonary tuberculosis. Doctor Alexander's prophecies were fulfilled by the rapid development of an era of surgical therapy which became an example to the world at large. For this publication, which appeared serially in the *American Journal of the Medical Sciences* in 1924 prior to its publication in book form, he received the quinquennial Samuel D. Gross Prize of the Philadelphia Academy of Surgery in 1925.

Doctor Alexander returned to the University of Michigan in 1926. His interest in thoracic surgery continued, but it was not until two years later that his attention was almost exclusively devoted to this new specialty. At this time in conjunction with Doctor John B. Barnwell, he surveyed the patients at the Michigan State Sanatorium and offered to this institution its first surgical program.

During this period Doctor Alexander applied the then accepted measures of collapse therapy in the treatment of pulmonary tuberculosis, and he developed two new procedures, namely, intercostal neurectomy and suprapariosteal, subcostal

pneumonolysis with pectoral muscle filling. Although he used the latter operation only rarely, the principle of the technique is the same as that more recently applied to subcostal extrapariosteal plombage. During the twenties it had been customary to remove eleven ribs, often in one stage, when performing a thoracoplasty. Doctor Alexander emphasized the advantage of staging the thoracoplasty into two operations and of resecting the upper ribs first. A rapid improvement in technique soon followed, and within the next several years he demonstrated the increased safety of removing fewer ribs at each stage, with the result that shortly thereafter it became customary to remove the upper seven ribs in not less than three stages. In the field of thoracoplasty he was also instrumental in popularizing anterior thoracoplasty and resection of the transverse processes of the vertebrae as aids in improving the thoracoplasty collapse.

In recognition of his attainments, Doctor Alexander became Professor of Surgery in 1932. A recurrence of illness in the same year served as a stimulus for beginning the rewriting and enlargement of his previous publication, which in 1937 evolved as a completely new book and the authoritative classic text on *The Collapse Therapy of Pulmonary Tuberculosis*. Doctor Alexander was early to recognize the advantages of resection in pulmonary tuberculosis, and in 1936 he performed his first resection, a pneumonectomy, for pulmonary tuberculosis with bronchostenosis. In more recent years, he was an ardent advocate of resection, but not to the exclusion of minor and major collapse therapy measures which he believed were of great advantage in the treatment of pulmonary tuberculosis. His interest in thoracic surgery included all aspects of this specialty, and among his contributions were the early use of the two-stage lobectomy tech-

nique for bronchiectasis, the recognition of the effectiveness of resection of pulmonary metastases in certain instances, and observations on the treatment of mediastinal and pulmonary neoplasms. In the field of cardiovascular diseases, his observations with others on localized stimulation of the exposed human heart led to a reversal in terminology of right and left bundle branch block. He was the first surgeon to resect an aneurysm of the thoracic aorta successfully.

Doctor Alexander was particularly well known for his early adoption of a residency training program in thoracic surgery. Inaugurated in 1928, it was one of the first residencies in thoracic surgery in this country. In 1932 it was augmented to include the requirements which are the same in principle as those later adopted by the Board of Thoracic Surgery. He always maintained that a thorough training in general surgery was a prerequisite to specialization in thoracic surgery and he insisted that this requirement be met by all of his residents. It is definitely no overstatement to say that Doctor Alexander has trained a larger number of thoracic surgeons in this country than has any other thoracic surgeon. Many of them in turn have established residency programs of their own, with the result that the effect of his efforts in this direction are difficult to appreciate fully.

Prior to his marriage to Emma Ward Woolfolk in 1936, Doctor Alexander lived with his sisters, now Mrs. William T. Campbell, and Mrs. Thomas R. Piersol, Jr., both of whom reside in California. A brother Stirling C. Alexander also lives in California.

The well-deserved honors which have accrued to Doctor Alexander in recognition of his contributions to thoracic surgery are legion. In 1940 he received the honorary degree of Doctor of Science from the

University of Pennsylvania. He was awarded the Trudeau Medal by the National Tuberculosis Association in 1941, and in the following year he was chosen to deliver the Trudeau Memorial Lecture at Saranac Lake. In 1953 he was recipient of the Bruce H. Douglas Award of the Michigan Trudeau Society. He was the only faculty member of the University of Michigan to have received both the Henry Russel Award and the Henry Russel Lectureship, these honors being conferred to a member of the faculty who has attained the highest distinction in the field of scholarship. Doctor Alexander was a past president of the American Association for Thoracic Surgery (1936), president-elect of the American Trudeau Society, an office which he had to relinquish because of recurrence of illness in 1946, a director and vice-president of the National Tuberculosis Association, and a past president of the Michigan Tuberculosis Association. He was a founder member of the American Board of Surgery and the Board of Thoracic Surgery. He was a member of the Editorial Boards of the *Journal of Thoracic Surgery*, the *International Abstract of Surgery*, and between 1938 and 1946 he served on the Editorial Board of the *American Review of Tuberculosis*.

Doctor Alexander was a Fellow of the American College of Surgeons and a member of the American Surgical Association, Central Surgical Association, Société Internationale de Chirurgie, Society for Clinical Surgery, American Medical Association, and the Michigan State Medical Society. He was an honorary member of the Society of Thoracic Surgeons of Great Britain and Ireland, Detroit Academy of Surgery, Sociedad Argentina de Cirujanos, Société Belge de Chirurgie, Société Française de la Tuberculose, Sociedad Argentina de Tisiologia, Sociedad Paraguaya de Tisiologia, and the Sociedad Ecuatoriana

de Tisiologia. He was also a member of Alpha Omega Alpha, Sigma Xi, Phi Kappa Phi, Alpha Mu Pi Omega, Delta Tau Delta, and an honorary member of Nu Sigma Nu. Doctor Alexander was Thoracic Surgeon to the Michigan State Sanatorium, the Jackson County Sanatorium, the Genessee County Tuberculosis Sanatorium, the Arthur S. Kimball Sanatorium, and a consultant in Thoracic Surgery, Veterans Administration Hospital, Ann Arbor. He was a member of the Committee of Civilian Consultants to the Surgeon-General of the United States Navy, and he had formerly been a consultant on the Committee on Thoracic Surgery of the National Research Council and the Medical Advisory Committee of the Medical Council of the Veterans Administration.

Doctor Alexander was a brilliant scholar and an inspiring teacher. He was meticulous in his attention to detail and unswerving in principle. In the operating room he took real pleasure in the demonstration of anatomic detail to undergraduate and graduate students alike. His consultation reports are masterpieces of thoroughness and English prose. He was a strict disciplinarian of his activities which were care-

fully regulated, so as to allow observance of an afternoon rest hour and an early retiring hour. In spite of these limitations, he organized his time so as to exhibit a remarkable capacity for productive work. His courage, cheerfulness, and optimism in the face of recurring illness were a source of wonderment and admiration to all who knew him and his personal charm and graciousness won him legions of friends by whom he was equally revered and respected.

His hospitality which his wife shared equally with him was renowned by all who visited at their home. For many years they spent the winter months in Arizona, and at home they enjoyed together the hobbies of gardening and duck hunting.

John Alexander died on July 16th, 1954. During his life he was particularly interested in the writings of his former residents. His constant inspiration and encouragement in their efforts has led to this monograph series, dedicated to one whose influence has been so profound in the development of thoracic surgery as a specialty, and as a tribute to the ideals and principles which he so admirably maintained.

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## Introduction to the John Alexander Monograph Series

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THE PRESENTATION of a particular subject in monographic form is a popular, commonplace but effective practice in Medicine. A single author may be responsible for a whole volume or many writers may contribute under the direction of an editor. This Monograph Series is unique in that it is planned and written by the disciples of one surgeon. These disciples are not contemporaries, but were associated with Doctor Alexander at various times over a period of nearly thirty years. They are all surgeons, staunchly individualistic with a strong critical sense, but having in common a spirit of inquiry and an insistence upon the importance of perfection in clinical and technical minutiae as always stressed by their Preceptor. All of them have widened their own interests, adding to the sum of knowledge but retaining a sense of loyalty to the solid basic fundamentals of surgery and inquiry insisted upon by him. That they should disagree among themselves and with Doctor Alexander himself at times and in small ways is inevitable. The rapid progress that has been made in such a short time cannot always be made along a straight highway, but must include explorations into side paths and byways. These disagreements, when they exist, are marks of individual thinking, make for progress and are interesting and stimulating when one thinks

that all of the authors started from the same basis of training and of pedagogic discipline.

Dr. Hugh Cabot was called to be Professor of Surgery in the University of Michigan in 1919. The clinical faculty in Surgery was on a part-time basis. Doctor Cabot elected to make it a full-time group in 1920, and made several appointments of young, untried men. When Doctor Alexander joined the Department of Surgery at that time he was young and immature, but with a fixed idea that surgery of the lung needed study and development. World War I had just finished its final year. It had become increasingly apparent in the war years that gunshot wounds of the thorax and infection of the lungs and pleura were frequent and that their proper care required new knowledge and techniques. These were haltingly evolved but real progress was made. The fear of the open chest was dispelled. It was probably in this milieu that Doctor Alexander's interest in surgery of the thorax originated. In 1918 and 1919 came the tragedy of world wide influenza with its killers, pneumonia and empyema. The attention of surgeons was still further sharply focused on lesions of the thorax. In 1920 these acute lesions were not uncommon and patients with chronic empyema, residual from previous years, were frequently seen. Acute

and chronic empyema were treated by Doctor Alexander and also by all members of the surgical staff. When he fell victim to tuberculosis he had not as yet had time to study or treat that form of pulmonary disease to any extent.

During his absence at Saranac Lake other surgeons on the staff initiated surgical treatment for certain patients with pulmonary tuberculosis. Relations were established with physicians in a few sanatoria in Michigan and through their encouragement some forms of collapse therapy such as phrenic nerve interruption and thoracoplasty were carried out on their patients. A number of operations for decompressions of the heart for constrictive pericarditis were also done. These surgical activities were important in laying a groundwork with the medical profession on developments in a new field on which Doctor Alexander could build his later specialization. Shortly after his return to active duty he instituted the residency training program on the basis of the Clinic thus developed in Thoracic Surgery.

In all fairness to the progress of sur-

gery in general one must emphasize that other Sections of the Department of Surgery were also developing and assuming an equally important status. One must also insist that progress in thoracic surgery was stimulated and helped by its close association with the laboratory and with other specialties including that of General Surgery. It was professional team work at its best.

The Department of Surgery is proud of this Monograph Series which is a record of the development of great knowledge in a surgical specialty that has evolved so importantly within such a short time. The Series is a monument to a man, to a method, to the men who are writing it, and to the educational program that made it possible.

We acclaim the advance in surgery by those who left us as neophytes. It means that many of those who completed training in our hospital, had or were imbued with the inquiring mind from which progress comes. That progress is beautifully demonstrated in the Series.



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## Preface

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THIS IS THE first volume of The John Alexander Monograph Series; others on different phases of thoracic surgery will follow. The primary responsibility for all volumes rests with the group of thoracic surgeons trained by Dr. Alexander.

Although John Alexander was intensely interested in all phases of thoracic surgery, the surgery of pulmonary tuberculosis was his first interest and the phase to which he was most devoted. He had published two books, as well as many articles, on this subject, and, at the time of his death, was working on a third book, to have been entitled "The Surgical Management of Pulmonary Tuberculosis."

It seems appropriate that the first volume in The John Alexander Monograph Series be on the surgery of pulmonary tuberculosis and that the title be the same he had selected for his next book.

Dr. Alexander firmly believed that every surgeon operating on patients with pulmonary tuberculosis should be well versed not only in the surgical, but also in the medical management of the disease; the chosen title reflects and emphasizes this viewpoint.

The reader will find a few conflicting statements in the chapters which follow in regard to indications and methods of therapy. Such differences of opinion are inevitable when a number of authors contribute to a book on a subject such as this, but since these differences are healthy and interesting, no attempt has been made to reconcile them. Actually, there is today considerably less controversy in regard to the indications for surgery in this

field than there were five years ago.

Because antimicrobial therapy is so important in the modern medical and surgical management of pulmonary tuberculosis, a comprehensive chapter on this subject by two of Dr. Alexander's close medical associates has been included.

The Editor and Editorial Board are indebted to Mr. Charles C Thomas and Mr. Payne Thomas, whose interest and initiative were responsible for the creation of The John Alexander Monograph Series.

The enthusiasm of Mrs. John Alexander for the Series and her courtesy and generosity in making available for reference the uncompleted manuscript for Dr. Alexander's third book are deeply appreciated.

The Editor is grateful to Richard F. Hoffman, M.D., for the preparation of the index, Mrs. Doris Ticehurst for her help in the preparation of the manuscript, and to Betsy Owen Steele, M.D., for many hours of proofreading.

Finally, the Editor wishes to acknowledge the support of an informal publication committee composed of a number of thoracic surgeons trained by Dr. Alexander, who, because of geographical expediency, assumed the responsibility of proceeding with plans for the Series and the appointment of the Editorial Board. This Committee consisted of John C. Jones, M.D., Lyman A. Brewer III, M.D., Francis X. Byron, M.D., Byron C. Evans, M.D., and John S. Chambers, Jr., M.D.

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