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EVARTS AMBROSE GRAHAM

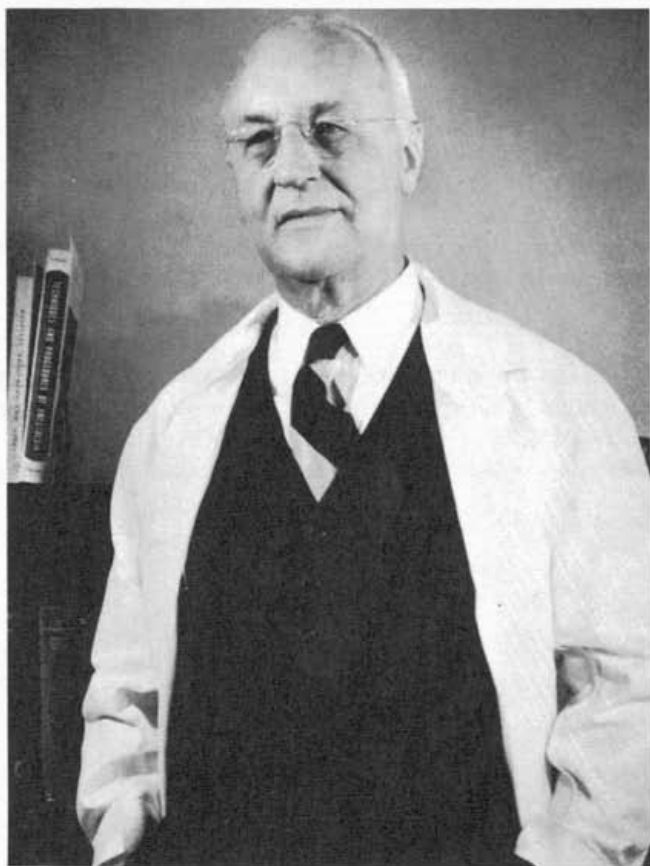
1883—1957

A Biographical Memoir by
LESTER R. DRAGSTEDT

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Biographical Memoir

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Evans A. Graham

EVARTS AMBROSE GRAHAM

March 19, 1883—March 4, 1957

BY LESTER R. DRAGSTEDT

EVARTS AMBROSE GRAHAM was born in Chicago, on March 19, 1883, and died in St. Louis of cancer of the lung on March 4, 1957. At the time of his death Dr. Graham was widely recognized as the leading surgeon of his day. He was, in every sense, a surgical statesman and was for many years the most influential voice in surgical meetings all over the world. He had devoted many years to the study of cancer of the lung and, together with Dr. Alton Ochsner of New Orleans, had pointed out the important role of cigarette smoking in the cause of this disease. In 1933, he first successfully removed the lung from a patient with lung cancer. This patient survived and was cured of his disease. Ochsner and Graham noted that practically all of the patients with lung cancer upon whom they operated were habitual cigarette smokers. Not long before his final illness, Dr. Graham and his wife, together with my wife and I, attended a surgical convention in Glasgow, Scotland, and were houseguests of Professor and Mrs. Arthur Mackey. Mrs. Mackey, a charming young lady, was smoking a cigarette when the Grahams and Dragstedts arrived at their home. To our consternation, shortly after the introductions, Dr. Graham took the cigarette away from Mrs. Mackey and told her that that was the last cigarette that she was to smoke. He said that he had been a confirmed cigarette smoker all of his life and that it was too late for him, but not too late for

her, to quit. Possibly he knew at that time that he had lung cancer and that the involvement of both lungs made removal by a surgical operation impossible. Before Dr. Graham and Dr. Ochsner reported their clinical studies, cigarette smoking was so common among surgeons that their convention rooms were often so clouded that it was difficult to see the speakers. By the time Dr. Graham died, it was almost impossible to find a surgeon smoking a cigarette.

Evarts Graham attended public schools and subsequently the Lewis Institute in Chicago. In the fall of 1900 he entered Princeton University and in 1904 graduated. His father, Dr. David W. Graham, was a leading surgeon on the west side of Chicago. He was a charter member of the staff of the Presbyterian Hospital and was president of the medical staff from 1898 to 1901. Although David Graham had contact with Christian Fenger, the Danish physician who first brought to Chicago and the Midwest knowledge of cellular pathology, bacteria, and infectious disease, he remained skeptical and paid scant attention to aseptic techniques in his surgical work. As a beginning medical student in 1911, I recall seeing "Daddy" Graham, as we students called him, perform an operation for the removal of tuberculous lymph glands in the neck of a child. Evarts Graham was his assistant and did all that he could to persuade his father to observe the principles of aseptic surgery. However, when Daddy Graham had finished scrubbing his hands and rinsing them in an antiseptic solution, as a final measure he washed his beard in the solution to the dismay of his son Evarts. We students were delighted, because, at this time, we had been taught something of bacteriology and were persuaded of course about the aseptic method of surgery.

Evarts's mother, Ida Barnett Graham, was a woman of extraordinary intelligence and energy, who devoted much of her life to public service, especially in connection with the Presbyterian church and hospital. For many years she was chairman of the woman's board of the hospital, a voluntary organization repre-

senting the Presbyterian churches of the Chicago area and including a general membership of public-spirited women. This remarkable woman was not only an inspiration to her husband and son, but also to other surgeons as well. With this background it is not surprising that Evarts embarked on a career in surgery.

After completing his studies at Princeton, Evarts Graham pursued medicine at Rush Medical College. At that time, the first two years of the medical course were given at The University of Chicago and the last two years at Rush Medical College, on the west side of Chicago, near the Cook County Hospital. At The University of Chicago, he was exposed to the inspiring teaching of Dr. A. J. Carlson, H. Gideon Wells, R. R. Bensley, and many others. After the completion of these two years, Evarts entered Rush Medical College and began his training in the clinical subjects. He made an outstanding record as an undergraduate student and was given an appointment in pathology with Ludvig Hektoen. During this period, he collaborated with Dr. Ernest E. Irons in a report on generalized blastomycosis. He received an M.D. degree in 1907 and spent the following year as an intern in the Presbyterian Hospital, where he became a close personal friend of Dr. Rollin T. Woodyatt, an internist some ten years his senior.

Woodyatt had just returned from a year of postgraduate study in the clinic of Professor Friedrich Muller, in Munich, and was charged with enthusiasm for the scientific spirit and investigative insight of this man. He sought to develop in Chicago a scientific clinic patterned on that of Muller, who was an able chemist in addition to being a leading internist; and this no doubt was responsible for Woodyatt's advice to Evarts to secure more training in chemistry. Dr. Arthur Dean Bevan, Chairman of the Department of Surgery in Rush Medical College, thought that Evarts was making a mistake in withdrawing from clinical work to spend two or three years in chemistry. He, as well as Evarts's father, failed to see how a knowledge of chem-

istry could be useful to a general surgeon. Evarts's persistence in studying chemistry in spite of this opposition is testimony to his independence and determination. However, Evarts has said this about his father: "I shall always be grateful to him. He supported me very eagerly both financially and by sympathetic understanding during the time that I stretched out my period of graduate training, even including the two years that I spent in the study of chemistry."

It was at The University of Chicago that Dr. Graham met Helen Tredway, who was also a graduate student in pharmacology. They were married in 1916. Throughout his life, Dr. Graham enjoyed the enthusiasm and intellectual support of this remarkable woman. In addition to her household duties and the care of two young children, Helen Tredway Graham became an associate professor of pharmacology at Washington University in St. Louis and continued an active career in teaching and research until she retired, in 1959. She was also active in a wide range of educational and civic matters, including civil liberties and air pollution control. She served as vice-president of the St. Louis League of Women Voters and a board member of the St. Louis Civil Liberties Committee. Mrs. Graham helped draft the civil service provisions of the St. Louis County Charter and was a member of the Board of Freeholders that drafted the metropolitan district plan for the coordination of services in St. Louis County. Like her husband, Mrs. Graham became concerned over the health dangers caused by air pollution and was instrumental in helping to secure air-sampling stations in St. Louis. She died of a heart attack in 1971, when she was eighty years old.

In 1915 Dr. Graham entered upon the private practice of surgery in a clinic in Mason City, Iowa. This was, on the whole, a disappointing experience. It was here that he became impressed with the evils of fee splitting and ghost surgery. It was often the practice of medical men to refer patients to surgeons

for operations and receive in return a portion of the surgeon's fee. The surgeon often felt that the medical man was insufficiently rewarded for his diagnostic work and so agreed to the split. Unfortunately, some surgeons returned a larger portion of the fee in order to secure more referred patients; and some medical men chose often inferior surgeons who gave a larger return. When Dr. Graham became President of the American College of Surgeons, he used his great influence to persuade the surgical societies to stop this practice among their members.

In 1918 Dr. Graham enlisted in the U.S. Army, was commissioned a captain, and sent to Fort Lee. He had been assigned to take a course in neurosurgery when he was visited by Dr. Allen B. Kanavel, a leading Chicago surgeon, who was on duty as a consultant in the office of the Surgeon General of the Army. Dr. Kanavel told Graham that there was growing apprehension about the treatment of empyema (collections of pus in the chest cavities) in the various army camps. The country was then in the first year of an influenza epidemic that would undoubtedly increase in severity. Pneumonia, accompanied by empyema, often followed the influenza and was the chief cause of death. Dr. Kanavel suggested that Graham work on this problem because of his unusual chemical training. Dr. Graham agreed and was shortly sent to Camp Lee to join with bacteriologist Edward K. Dunham and chemist Richard D. Bell to become what came to be known as the Empyema Commission.

With the help of Dr. Kanavel, a questionnaire was sent to the army camp hospitals; and it was found that the mortality from influenza pneumonia was about 30 percent. Many patients whose pulmonary reserve had been crippled by massive, often bilateral bronchopneumonia, were being hurried to an operating room as soon as fluid containing bacteria was found in the chest. The operation was rib resection with open tube drainage. Death often occurred within a half hour after the operation.

At the time when Dr. Graham and his colleagues on the

Empyema Commission were doing their work, the writer of this memoir was also in the army serving as pathologist at the general hospital in Camp Merritt, New Jersey. The influenza was then at its height, and in the camp of 35,000 men, as well as in the surrounding cities, there was a general feeling of foreboding—almost of fear like that described in London and Paris during the plague. As many as twenty to thirty young soldiers died daily and were brought to the morgue for autopsy. My examination usually revealed both pleural cavities filled with pus and causing such compression on the lungs as to seriously interfere with breathing. At times I requested the physicians who were caring for these patients to drain the pleural and pericardial cavities at an earlier date. They responded by saying that such attempts had proved invariably fatal. The contribution of Dr. Graham and his colleagues consisted of devising methods for the closed drainage of these cavities without permitting air to enter and collapse the lungs. It was a great contribution to the treatment of empyema and opened the way for Dr. Graham's subsequent career as one of the leaders of the new thoracic surgery. *Streptococcus hemolyticus* usually accompanied the influenza in this epidemic and was responsible for most of the deaths. Penicillin, which controls this deadly infection, was not then available. Fortunately, influenza accompanied by *Streptococcus hemolyticus* seems now to have disappeared.

At his urgent request, Dr. Graham was given overseas duty as commanding officer of U.S. Evacuation Hospital #34 in France. On returning to the United States after the war, in the spring of 1919, he was assigned to Fort Sheridan, in Illinois. The following account of Dr. Graham's appointment as Professor of Surgery at Washington University Medical School was given to me by Dr. Philip Anderson Shaffer:

"At that time, members of the staff of base hospital #21 from Washington University were also returning from France. During their absence many circumstances had changed. Dr. Fred

Murphy, chief surgeon of base hospital #21 was also Professor of Surgery in Washington University and head of that department. During his absence the full time system in medicine had been adopted for heads of the clinical departments. This plan displeased Murphy and led to his retirement thus making it necessary to seek his successor.

“In 1916, I had been drafted as Dean of the Washington University Medical School and, in that capacity, went to Chicago in search of a candidate for our department of medicine. My friend Dr. Rollin T. Woodyatt, whom I consulted, told me that if I had wanted a surgeon he could have named an excellent candidate. He cited the talents and accomplishments of Evarts Graham who, however, had just accepted appointment to a clinic in Mason City, Iowa.

“In 1917, I had been sent to France as an officer in the section of food and nutrition in the sanitary corps attached to the surgeon general’s office. At that time I received the resignation of Dr. Murphy as professor of surgery at Washington University Medical School. I recalled the praise of Woodyatt and others of a young surgeon whose name I had forgotten. My files however disclosed it. Dr. Graham was located at Fort Sheridan and a committee of the faculty was sent to confer with him as to his qualifications and interest in the position in St. Louis. He was invited to visit the school, which he did on June 6 and 7, 1919. The corporation approved his appointment as Professor of Surgery effective July 1, 1919.

“Evarts’s prompt acceptance of this appointment after such a short visit was surprising to me but was explained many years later when by chance I recognized his face in a group photograph of a large attendance at the first convention of the Federation for Experimental Biology and Medicine to meet in St. Louis. Examination of the program of that meeting showed that Evarts had read a paper there and had taken part in the discussion. He had already explored the plan for a modern medical school and

appreciated the opportunity for the development of his ambitions. With the acceptance of that appointment he entered into associations that continued for the rest of his life: devoted and loyal to his friends and to his responsibilities, of unshakable mental integrity, outspoken and with wide vision. He was invaluable not only to his department and field, but as a member of the executive faculty of the whole medical school and from this post his influence in the field of medical education and practice spread worldwide." This eloquent tribute by Dean Shaffer was re-echoed by the many faculty members who attended Dr. Graham's retirement dinner.

Dr. Graham entered upon his work as professor of surgery at Washington University with enthusiasm and high hopes. He had long been interested in the work of Peyton Rous and P. D. McMaster on the function of the gallbladder. These men had demonstrated that the thin bile from the liver was stored in the gallbladder between meals and concentrated there by the absorption of water by the gallbladder mucosa. John J. Abel and Leonard Rowntree had discovered that the chemical phenol-tetrachlorophthalein, when injected into the blood stream, was selectively removed from the blood by the liver and excreted in the bile. A similar compound, phenoltetrabromthalein, was being used as a test of liver function. Dr. Graham speculated that if iodine could be substituted for chlorine in the molecule of this drug then perhaps the phenol tetraiodothalein would also be selectively excreted in the bile. Iodine being opaque to X rays would make the bile cast an X-ray shadow, and so the gallbladder could be visualized. He was able to secure sodium tetraiodophenolphthalein from the Eastman Kodak Company and began his work in the laboratory on experimental animals. Drs. Warren Cole and Glover Copher assisted in these experiments. Dr. Cole relates that, although they were able to visualize the gallbladder in dogs, when they first administered the drug to patients with gallstones or suspected gallstones, no visualization

of the gallbladder occurred. This was a great disappointment, as it was hoped that by this method of visualizing the gallbladder by X ray a diagnosis of gallstones could be made or confirmed. Fortunately, they later gave the drug to patients without symptoms of gallbladder disease and found that the gallbladder visualized perfectly. Subsequent experiments revealed that the method provided a good test for the function of the gallbladder. If the gallbladder mucosa were normal, it would concentrate the bile; and the concentrated bile containing the drug was visualized by X ray. When the gallbladder wall was diseased and did not concentrate the bile, there was no visualization of the gallbladder. Nonvisualization of the gallbladder indicated that the mucous membrane of the gallbladder was not normal and so did not concentrate the bile. Often the visualized gallbladder displayed gallstones that, because of the absence of the drug in the stones, cast a negative shadow. These discoveries by Dr. Graham and his associates made the diagnosis of diseases of the gallbladder much more accurate and, in addition, proved very useful in further investigations of the function of the gallbladder in other conditions. Undoubtedly Dr. Graham's work on the gallbladder was influential in his election as a member of the National Academy of Sciences in 1941.

Although teaching and administrative burdens consumed much of Dr. Graham's time, he devoted himself with great success to the study of chest diseases along with his work on the gallbladder. His department became one of the leading centers for thoracic surgery in the United States. At that time removal of a lobe of the lung was occasionally done in patients with cancer of the lung where the tumor was thought to be limited to one lobe. Dr. Graham was operating upon a fellow physician when exploration of the lung revealed that the cancer involved more than one lobe. To the awe of the surgeon spectators, he then proceeded to remove the entire lung. It is probable that he had considered this eventuality before and that his decision to

remove the entire lung was not so casual as it seemed. The patient recovered and was cured of his disease. This surgical triumph in 1933 electrified the surgical world, and, in addition to adding to Dr. Graham's fame, stimulated other surgeons to try to cure these unfortunate patients. In succeeding years, Dr. Graham and his associates operated upon many more patients sent to them from all parts of the world. I recall one of his forceful statements, namely, that every patient upon whom he had operated for cancer of the lung had been an inveterate cigarette smoker.

Four days after Dr. Graham's death, the Board of Directors of Washington University on March 8, 1957, passed the following resolution:

"Whereas, Dr. Evarts Ambrose Graham lighted man's way to longer life and better health by his diligent pursuit of truth and by his brilliant and courageous achievements in surgery and medical research; and

"Whereas, Dr. Graham devoted thirty-eight years of his life to a distinguished career with the Washington University Medical School, receiving international acclaim for his valuable leadership in medical education; and

"Whereas, Dr. Graham served the University faithfully and with excellent results in many special assignments, including chairmanship of faculty committees to select new chancellors;

"Therefore, be it resolved that the Board of Directors of Washington University express its gratitude for the life of this great man and pay tribute to a memory that will forever deserve a place of honor in the annals of man."

HONORS AND DISTINCTIONS

ACADEMIC POSITIONS

- 1910–1914 Assistant in Surgery, Rush Medical College
1919–1951 Professor of Surgery, Washington University School of
Medicine, and Surgeon-in-Chief, Barnes Hospital and
St. Louis Children's Hospital

MILITARY SERVICE

- 1918 Major, Medical Corps, U.S. Army, with Emphyema Com-
mission. Later Commanding Officer, Evacuation Hos-
pital #34 in France

HONORARY DEGREES

- 1926 LL.D. Central College
1927 Sc.D. University of Cincinnati
1928 M.S. Yale University
1929 Sc.D. Princeton University
1931 Sc.D. Western Reserve University
1940 Sc.D. University of Pennsylvania
1941 Sc.D. University of Chicago

LECTURESHIPS

- 1924 and
1934 Harvey Lecturer
1924 Mutter Lecturer
1926 McArthur Lecturer
1928 Shattuck Lecturer
1930 Melbourne (Australia) Permanent Postgraduate Com-
mittee
1930 Alvarez Lecturer
1931 Joyce Lecturer
1932 Arthur Dean Bevan Lecturer
1933 Caldwell Lecturer
1935 Balfour Lecturer
1937 Judd Lecturer

AWARDS AND DISTINCTIONS

- 1920 Co-editor, *Archives of Surgery*
- 1920 Gross Prize
- 1921 Société Internationale de Chirurgie
- 1922 Sent by Rockefeller Foundation to Great Britain to investigate teaching of surgery in British Medical Schools
- 1924–1933 Member, National Board of Examiners
- 1925 Temporary Surgeon-in-Chief, Peter Bent Brigham Hospital
- 1925 Editor, *Yearbook of Surgery*
- 1925 Gold Medal, Radiological Society of North America
- 1925 Leonard Research Prize, American Roentgen Society
- 1925–1939 Member, Medical Fellowship Board, National Research Council
- 1927 Gold Medal, St. Louis Medical Society
- 1928 President, American Association for Thoracic Surgery
Society of Clinical Surgery
- 1931 Editor, *Journal of Thoracic Surgery*
- 1932 Kaiserlich Deutsche Akademie der Naturforscher
- 1933 Gold Medal, Southern Medical Association
- 1934 Co-editor, *Annals of Surgery*
- 1937 John Scott Medal of the City of Philadelphia
- 1937 President, American Surgical Association
- 1937–1941 Chairman, American Board of Surgery
- 1938 Honorary Fellowship, Association of Surgeons of Great Britain and Ireland
- 1938 Honorary Membership, Society of Thoracic Surgeons of Great Britain and Ireland
- 1939 Temporary Professor of Surgery, St. Bartholomew's Hospital, London
- 1940 Chairman, Committee on Surgery, National Research Council
- 1940–1941 President, American College of Surgeons; elected to the Board of Regents, 1941
- 1941 Member, Royal Society of Sciences, Uppsala, Sweden
- 1941 Member, American Philosophical Society
- 1941 Member, National Academy of Sciences

- 1941 Honorary Member, Argentine Society of Surgeons
1942 Member of committee appointed by Secretary of War
to study the Medical Department of the Army
1942 Lister Medal for 1942
1942 St. Louis Award
1943 Honorary Fellowship, Royal College of Surgeons of
England

BIBLIOGRAPHY

KEY TO ABBREVIATIONS

- Am. J. Med. Sci. = American Journal of Medical Sciences
 Am. J. Roentgenol. = American Journal of Roentgenology
 Am. J. Surg. = American Journal of Surgery
 Am. Rev. Tuberc. = American Review of Tuberculosis
 Ann. Clin. Med. = Annals of Clinical Medicine
 Ann. Surg. = Annals of Surgery
 Annu. Rep. Barnes Hosp. = Annual Report of Barnes Hospital
 Arch. Pathol. = Archives of Pathology
 Arch. Surg. = Archives of Surgery
 Cancer Res. = Cancer Research
 Dis. Chest = Diseases of the Chest
 J. Am. Chem. Soc. = Journal of the American Chemical Society
 J. Am. Med. Assoc. = Journal of the American Medical Association
 J. Exp. Med. = Journal of Experimental Medicine
 J. Infect. Dis. = Journal of Infectious Diseases
 J. Mo. State Med. Assoc. = Journal of the Missouri State Medical Association
 J. Thorac. Surg. = Journal of Thoracic Surgery
 N. Engl. J. Med. = New England Journal of Medicine
 Postgrad. Med. = Postgraduate Medicine
 Proc. Soc. Exp. Biol. Med. = Proceedings of the Society for Experimental Biology and Medicine
 South. Med. J. = Southern Medical Journal
 Surg. Clin. North Am. = Surgical Clinics of North America
 Surg. Gynecol. Obstet. = Surgery, Gynecology, and Obstetrics
 Trans. Chic. Pathol. Soc. = Transactions of the Chicago Pathological Society
 Wash. Univ. Med. Alumni Q. = Washington University Medical Alumni Quarterly

1906

- With E. E. Irons. Generalized blastomycosis. *J. Infect. Dis.*, 3(4): 666-82.

1907

- A case of remarkable latency (spontaneous healing?) of carcinoma. *Trans. Chic. Pathol. Soc.*, 7:8-13.
 Latency of carcinoma. *Surg. Gynecol. Obstet.*, 4(6):701-4.

1908

On the phagocytability of pneumococci in the sputum in pneumonia.
J. Infect. Dis., 5:273-78.

1909

Olive oil for post-anesthetic vomiting. J. Am. Med. Assoc., 53(25):
2094-95.

1910

The effect of ether on certain processes of immunity. J. Am. Med.
Assoc., 54:1043-45.

1911

The effect of ether and ether anesthesia on bacteriolysis, agglutina-
tion and phagocytosis. J. Infect. Dis., 8:147-75.

1912

The pathogenesis of the hemorrhagic diseases of the new-born.
J. Exp. Med., 15:307-20.
With H. T. Woodyatt. Alimentary respiration: the secretion of CO₂
by the alimentary mucosa and its relation to eructations of gas
and abnormal inflation of the stomach and intestine. Trans.
Chic. Pathol. Soc., 8:353-59.

1913

Further observations on relation of fats to anesthesia. Trans. Chic.
Pathol. Soc., 9:49-51.

1914

The origin and nature of foetal movements. Surg. Gynecol. Obstet.,
19:360-64.

1915

The resistance of pups to late chloroform poisoning in relation to
liver glycogen. J. Exp. Med., 21:185.
Late poisoning with chloroform and other alkyl halides in relation-
ship to the halogen acids formed by their chemical dissociation.
J. Exp. Med., 22:48-75.

An unusual skin infection due to *Bacillus mucosus capsulatus* associated with a bladder drainage after prostatectomy. Surg. Gynecol. Obstet., 26:394-95.

1916

With Julius Stieglitz and Helen Tredway Graham. The thermal decomposition of symmetrical diarylhydrazines. J. Am. Chem. Soc., 38:1737-60.

Delayed chloroform poisoning. American Year Book of Anesthesia and Analgesia, p. 136.

1917

Spinal puncture in diabetes insipidus. J. Am. Med. Assoc., 69(18): 1498.

Diabetes insipidus following gun-shot wound of head. Ann. Surg., 66(5):529.

Some theoretical considerations concerning chloroform. Am. J. Surg., Q. Suppl.: American Journal of Anesthesia and Analgesia, 31:34-38.

Toxic factors of some of the common anesthetic substances. J. Am. Med. Assoc., 69(20):1666.

1918

With Helen Tredway Graham. The retardation by sugars of diffusion of acids in gels. J. Am. Chem. Soc., 40 (12) :1900.

Two-stage prostatectomy. New York Medical Journal, 107:447.

Acidosis in surgery. Journal of the Iowa Medical Society, 8:130.

An unusual skin infection due to *B. mucosus capsulatus* associated with a bladder drainage after prostatectomy. Surg. Gynecol. Obstet., 26:394.

Hepatitis—a constant accompaniment of cholecystitis. Surg. Gynecol. Obstet., 26:521.

With the Empyema Commission. Cases of empyema at Camp Lee. J. Am. Med. Assoc., 71(6):443-48.

With R. D. Bell. Open pneumothorax: its relation to the treatment of empyema. Am. J. Med. Sci., 156(6): 839.

1919

The maximum non-fatal opening of the chest wall. J. Am. Med. Assoc., 73(26):1934.

1920

- Sodium carbonate in chloroform poisoning. *Archives of Internal Medicine*, 25:575-83.
- Some principles involved in the treatment of empyema. *Surg. Gynecol. Obstet.*, 31:60-71.
- Importance of the vital capacity in thoracic surgery. *J. Am. Med. Assoc.*, 75:992-95.
- Some surgical aspects of asphyxia. *Cinquième Congrès de la Société Internationale de Chirurgie*, pp. 425-59; also in *Ann. Surg.*, 73: 170-98.

1921

- With M. G. Peterman, and W. S. Priest, Jr. The association of hepatitis with experimental cholecystitis and its bearing on the pathogenesis of cholecystitis in the human. *Arch. Surg.*, 2:92-115.
- With M. G. Peterman. Pathogenesis of infections of the biliary tract. *Transactions of the American Surgical Association*, 39:126-38.
- Influence of respiratory movements on the formation of pleural exudates. *J. Am. Med. Assoc.*, 76:784-85.

1922

- With M. G. Peterman. Further observations on the lymphatic origin of cholecystitis, choledochitis, and the associated pancreatitis. *Arch Surg.*, 4:23-50.
- Considerations of the surgical treatment of bronchiectasis. *South. Med. J.*, 15:639.
- With Duff S. Allen. Intracardiac surgery—a new method. *J. Am. Med. Assoc.*, 79:1028.
- Surgical treatment of syphilis of the stomach. *Ann. Surg.*, 76:449.
- Case of familial hemolytic icterus associated with pulmonary tuberculosis and old tuberculosis of the hip. Splenectomy, cholecystectomy, relief from jaundice. *Surg. Clin. North Am.*, 2:1483.
- Hernia of the lung and adenoma of the thyroid. *Surg. Clin. North Am.*, 2:1493.
- A case of lung abscess due to the Friedlander bacillus. *Surg. Clin. North Am.*, 2:1501.
- With J. J. Singer. The newer treatments of bronchiectasis. *J. Mo. State Med. Assoc.*, 19:390.

1923

- The surgical treatment of bronchiectasis. *Arch. Surg.*, 6:321.
- Les principes qui découlent de la chirurgie intrathoracique. *Presse Médicale*, 31(13):141.
- With Dr. V. R. Deakin. Functional liver tests: an experimental study. *Surg. Gynecol. Obstet.*, 36:348.
- Recent phases of thoracic surgery. *J. Am. Med. Assoc.*, 80:1825-31.
- With J. J. Singer. A study of thirty-four cases of abscess of the lung. *J. Am. Med. Assoc.*, 81:193-94.
- Pneumectomy with the cautery. *J. Am. Med. Assoc.*, 81:1010-12.
- Lung abscess. *Surg. Gynecol. Obstet.*, 36:719-21.
- Clinic on cholecystitis at University of California Medical School, Feb. 9, 1923, and Clinic on Empyema at Leland Stanford Junior University School of Medicine, Feb. 10, 1923. *Journal of the California State Medical Association*, pp. 1-12 and 13-22.

1924

- A reconsideration of the question of the effects of an open pneumothorax. *Arch. Surg.*, 8:345.
- With W. H. Cole. Roentgenologic examination of the gallbladder. *J. Am. Med. Assoc.*, 82:613.
- With Hans Deutsch. The value of Sgambati's reaction for acute peritonitis. *Arch. Surg.*, 8:588.
- Principles involved in the treatment of acute and chronic empyema. *Surg. Gynecol. Obstet.*, 38:466.
- With W. H. Cole and G. H. Copher. Visualization of the gallbladder by the sodium salt of tetrabromphenolphthalein. *J. Am. Med. Assoc.*, 82:1777.
- The surgical treatment of empyema in the acute and chronic stages. In: *The Medical Department of the U.S. Army in the World War*, vol. 11, pp. 285-319. U.S. Surgeon General's Office. Washington: U.S. Govt. Print. Off.
- The possibilities of thoracic surgery. *Ann. Clin. Med.*, 3:96.
- A method for the roentgenological visualization of the gallbladder. *Ann. Clin. Med.*, 3:99.
- Surgery of the thorax. In: *Abt's Pediatrics*, vol. 4, pp. 60-193. Philadelphia: W. B. Saunders Co.

- Alterations of intrapleural pressure and their significance. (Harvey Lecture) *Medicine*, 3:417.
- Considerations in the diagnosis of lesions of the biliary tract. (Mutter Lecture) *Transactions of the College of Physicians of Philadelphia*, 46:821.

1925

- With W. H. Cole and G. H. Copher. Cholecystography: an experimental and clinical study. *J. Am. Med. Assoc.*, 84:14-16.
- Cautery pneumectomy for chronic suppuration of the lung. *Arch. Surg.*, 10:392-418.
- With W. H. Cole and G. H. Copher. The roentgenological visualization of the gallbladder by the use of intravenous injections of sodium tetrabromophenolphthalein. *Radiology*, 4:83-88.
- With W. H. Cole and G. H. Copher. Cholecystography: the use of sodium tetraiodophenolphthalein. *J. Am. Med. Assoc.*, 84:1175-77.
- Role of surgery in the treatment of pulmonary suppuration. *J. Am. Med. Assoc.*, 85:181-84.
- With W. H. Cole, S. Moore, and G. H. Copher. Cholecystography: the oral administration of sodium tetraiodophenolphthalein. *J. Am. Med. Assoc.*, 85:953-55.
- Some Fundamental Considerations in the Treatment of Empyema Thoracis.* (Samuel D. Gross Prize Essay) St. Louis, C. V. Mosby Co., 110 pp.
- Physiology. Chap. 2 in: *Thoracic Surgery, the Surgical Treatment of Thoracic Disease*, by H. Lilienthal, pp. 83-116. Philadelphia: W. B. Saunders Co.
- Acute hemorrhagic pancreatitis, with probable recurrent attacks followed by recovery after operation during last attack. *Surg. Clin. North Am.*, 5:1387.
- Cardiolysis for chronic mediastinopericarditis. *Surg. Clin. North Am.*, 5:1396.
- Cholelithiasis. Advantages of cholecystography. *Surg. Clin. North Am.*, 5:1402.
- X-ray diagnosis of gall-stones. On cholecystographic examination shadows found to be outside of gall-bladder. *Surg. Clin. North Am.*, 5:1409.

"What is surgery?" (Oration on Surgery, Southern Medical Association, Nov. 9) *South. Med. J.*, 18:864.

With Warren H. Cole and Glover H. Copher. Cholecystography: its development and application. (Leonard Prize Essay) *Am. J. Roentgenol.*, 14:487.

1926

With Warren H. Cole, Glover H. Copher, and Sherwood Moore. Simultaneous cholecystography and tests of hepatic and renal functions by a single new substance, sodium phenoltetraiodophthalein: preliminary report. *J. Am. Med. Assoc.*, 86:467.

Discussion on vital capacity. *Arch. Surg.*, 12:280.

With J. J. Singer. Roentgen-ray study of bronchiectasis. *Am. J. Roentgenol.*, 15:54.

With J. J. Singer. The treatment of bilateral lung suppuration. *Am. Rev. Tuberc.*, 13(3):225.

Gallbladder diagnosis from the standpoint of the surgeon. *Radiology*, 6:273.

The treatment of abscess of the lung. *Ann. Clin. Med.*, 4(11):926.

With W. H. Cole, G. H. Copher, and S. Moore. Cholecystography: the use of phenoltetraiodophthalein. *J. Am. Med. Assoc.*, 86:1899.

With G. H. Copher and S. Kodama. The filling and emptying of the gallbladder. *J. Exp. Med.*, 44:65.

With W. H. Cole, G. H. Copher, and S. Kodama. Some new phases of the physiology of the biliary tract. *Ann. Surg.*, 84:343.

Some recent developments in our knowledge of the biliary tract. *British Medical Journal*, 2:671-76.

The surgical treatment of pulmonary suppuration in children. *J. Am. Med. Assoc.*, 87:806.

With S. Kodama. The lymphatics of the extrahepatic biliary passages. *Surg. Gynecol. Obstet.*, 43:140.

New developments in our knowledge of the gallbladder. (McArthur Lecture) *Am. J. Med. Sci.*, 172:625.

1927

Le Diagnostic des Cholécystites et le Mécanisme de Vidage de la Vésicule Biliaire. *Revue Médicale Française*, 8:119.

With W. H. Cole. Simultaneous cholecystography and determination of liver function. *Proc. Soc. Exp. Biol. Med.*, 24:500.

- The present status of cholecystography and remarks on the mechanisms of emptying of the gallbladder. *Surg. Gynecol. Obstet.*, 44: 153.
- With Joseph W. Larimore. Diverticula and duplicature of the duodenum, with reference to the importance of the cholecystitis in the production of symptoms. *Surg. Gynecol. Obstet.*, 45:257-65.
- Report of surgeon-in-chief of Barnes Hospital. *Annu. Rep. Barnes Hosp.*, 1924-1925, pp. 34-53.
- The teaching of clinical work to the undergraduate. *J. Am. Med. Assoc.*, 88:1379-83.
- The treatment of pulmonary suppuration. *Ann. Surg.*, 86:174-81.
- Editor. *The Year Book of General Surgery, 1926*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc.
- The Department of Surgery, Washington University School of Medicine, St. Louis. In: *Methods and Problems of Medical Education*, p. 327. Eighth Series. New York: Rockefeller Foundation.

1928

- The bronchoscopic and surgical treatments of pulmonary suppuration. *Am. Rev. Tuberc.*, 17:33-41.
- With E. R. Wiese. Lipomas of the mediastinum. *Arch. Surg.*, 16: 380-85.
- Editor. *The Year Book of General Surgery, 1927*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 800 pp.
- With W. H. Cole, Glover H. Copher, and S. Moore. *Diseases of the Gall Bladder and Bile Ducts*. Philadelphia, Pa.: Lea & Febiger. 500 pp.
- Remarks on carcinoma of the lung. *South. Med. J.*, 21:199-202.
- With Warren H. Cole and Glover H. Copher. Simultaneous cholecystography and determination of hepatic function. *J. Am. Med. Assoc.*, 90: 1111-13.
- The roentgenological examination of the gall bladder. *Canadian Medical Association Journal*, 17:1019-23.
- Gall bladder cases. *South. Med. J.*, 21:271-74.
- Report of surgeon-in-chief of Barnes Hospital. *Annu. Rep. Barnes Hosp.*, 1926-1927, pp. 34-38.
- Editor. *The Year Book of General Surgery, 1928*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 800 pp.
- Some functional tests and their significance. *N. Engl. J. Med.*, 199: 1-7.

1929

- Uses and abuses of cholecystography. *South. Med. J.*, 22:10-15.
- The significance of changed intrathoracic pressures. *Arch. Surg.*, 18:181-89.
- Pulmonary tuberculosis combined with carcinoma of lung. *J. Mo. State Med. Assoc.*, 26:70-73.
- Editor. *The Year Book of General Surgery, 1929*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 800 pp.
- The surgical treatment of pulmonary tuberculosis. *J. Mo. State Med. Assoc.*, 26:583-86.
- Decompression of the heart. *Ann. Surg.*, 90:817-28.
- With Duff S. Allen. Effects of pressure on the heart, with reference to the advisability of decompression of greatly enlarged hearts. *Arch. Surg.*, 19:1663-71.
- With Duff S. Allen. Thoracoplasty and phrenicectomy. *Arch. Surg.*, 19:1545-51.
- With N. Arneson and R. Elman. Value of blood amylase estimations in diagnosis of pancreatic disease; clinical study. *Arch. Surg.*, 19:943-67.
- With J. J. Singer. Lung. Clinic demonstrations. *Arch. Surg.*, 19:1552-70.
- St. Louis Meeting of the American Association for Thoracic Surgery. *Arch. Surg.*, 19:1545-1678. (Portion of program provided by Washington University School of Medicine and the Chest Service of Barnes Hospital)
- The application of surgery to pulmonary tuberculosis. Proceedings, Annual Meeting of the Missouri Tuberculosis Association, Sept. 27.

1930

- Editor. *Surgical diagnosis*, 3 vols. Philadelphia, Pa.: W. B. Saunders Co.
- With Franklin E. Walton and R. M. Moore. The nerve pathways in the vomiting of peritonitis. *Proc. Soc. Exp. Biol. Med.*, 27:712-14.
- With H. C. Ballou, H. M. Wilson, and J. J. Singer. Esophagus, stomach and heart following unilateral phrenicectomy. *Arch. Surg.*, 1291-1314.
- Editor. *The Year Book of General Surgery, 1930*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 848 pp.

Physiological aspects of the lungs of importance to the surgeon. In: *Practice of Surgery*, ed. by Dean Lewis, vol. 4, chap. 9, pp. 1-26. Hagerstown, Md.: W. F. Prior Co., Inc.

1931

With N. A. Womack and W. B. Gnagi, Jr. Adenoma of the Islands of Langerhans with hypoglycemia. *J. Am. Med. Assoc.*, 97:831-36.
The story of the development of cholecystography. (Alvarez Lecture) *Am. J. Surg.*, 12:330-35.

With Harry C. Ballou. Surgical aspects of cancer of the esophagus. *Annals of Otology, Rhinology, & Laryngology*, 40:895.

The prevention of carcinoma of the gallbladder. (Ewing Festschrift) *Ann. Surg.*, 93:317.

With F. E. Walton and R. M. Moore. The nerve pathways in the vomiting of peritonitis. *Arch. Surg.*, 22:829-37.

Observations on the reaction of bronchial fistulae to acute infections of the upper respiratory tract. (Matas Festschrift) *Am. J. Surg.*, 14:382-83.

Lowering the mortality after operations on the biliary tract. *Illinois Medical Journal*, 60:196-202. (Sept.):1-17.

Editor. *The Year Book of General Surgery, 1931*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 804 pp.

1932

With Robert Elman. The pathogenesis of the "strawberry" gallbladder. *Arch. Surg.*, 24:14-22.

With Harry Ballou and J. J. Singer. Bronchiectasis. *J. Thorac. Surg.* (4 installments), 1(2):154-93; 1(3):296-326; 1(4):397-431; 1(5):502-61.

Editor. *The Year Book of General Surgery, 1932*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 816 pp.

1933

With N. A. Womack. The application of surgery to the hypoglycaemic state due to islet tumors of the pancreas and to other conditions. (Bevan Lecture) *Surg. Gynecol. Obstet.*, 56:728-42.

Estimating the risk of operations on the biliary tract by testing the excretory function of the liver. *Radiology*, 21:105-206.

- With H. A. Carlson, H. C. Ballon, and H. M. Wilson. The effect of phrenicectomy upon cough and expectoration. *J. Thorac. Surg.*, 2(6):573-84.
- With Maurice Berck. Principles versus details in the treatment of acute empyema. *Ann. Surg.*, 98:520-27.
- With H. A. Carlson, H. C. Ballon, and H. M. Wilson. Effect of phrenicectomy upon the efficiency of cough and upon elimination of lipiodol from lungs. *Proc. Soc. Exp. Biol. Med.*, 30:292-93.
- Editor. *The 1933 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 826 pp.
- With J. J. Singer. Successful removal of an entire lung for carcinoma of the bronchus. *J. Am. Med. Assoc.*, 101:1371-74.

1934

- The diagnosis and treatment of primary carcinoma of the bronchus or lung. (Caldwell Lecture) *American Journal of Roentgenology and Radium Therapy*, 31(2):145-52.
- With William Ehrlich and Harry Ballon. Superior vena caval obstruction with a consideration of the possible relief of symptoms by mediastinal decompression. *J. Thorac. Surg.*, 3(4):352.
- With Alexis F. Hartmann. Subtotal resection of the pancreas for hypoglycaemia. *Surg. Gynecol. Obstet.*, 59:474-79.
- In memoriam—Dr. Carl Arthur Hedblom. *J. Thorac. Surg.*, 3(6):553-58.
- With W. Arthur Mackey. A consideration of the stoneless gallbladder. *J. Am. Med. Assoc.*, 103:1497-99.
- The clinical application of some recent knowledge of the biliary tract (Harvey Lecture) *The Harvey Lectures, 1933-1934*, 29:176-203.
- Editor. *The 1934 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 815 pp.

1935

- With J. J. Singer and Harry C. Ballon. *Surgical Diseases of the Chest*. Philadelphia: Lea & Febiger. 1070 pp.
- With Robert W. Bartlett and George Crile, Jr. A lymphatic connection between the gallbladder and liver. *Surg. Gynecol. Obstet.*, 61(3):363-65.
- Editor. *The 1935 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 838 pp.

Tumors of the Islands of Langerhans. In: *Christopher's Textbook of Surgery*. Philadelphia: W. B. Saunders Co.

1936

Primary carcinoma of the lung or bronchus. (Balfour Lecture) *Ann. Surg.*, 103(1):1-12.

With H. L. Cabitt and J. J. Singer. Bronchography following thoracoplasty for tuberculosis. *J. Thorac. Surg.*, 5(3):259.

The Islands of Langerhans (hyperinsulinism). In: *Christopher's Textbook of Surgery*, pp. 245-47. Philadelphia: W. B. Saunders Co.

Report of the Committee to Study Further Problems of Postgraduate Surgical Education in General and the Qualifications for Specialization in General Surgery in Particular. *Ann. Surg.*, 103:863-69.

Training of the thoracic surgeon from the standpoint of the general surgeon. *J. Thorac. Surg.*, 5(6):575.

With J. J. Singer. Three cases of resection of calcified pulmonary abscess (or tuberculosis) simulating tumor. *J. Thorac. Surg.*, 6(2): 173-83.

Editor. *The 1936 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 831 pp.

1937

With Wm. Tuttle and E. J. O'Brien. Studies on tuberculin hypersensitiveness. *J. Thorac. Surg.*, 6(5):544-60.

Samuel Gross looks in on the American Surgical Association. (Address of the President) *Ann. Surg.*, 106(4):481-91.

Graduate training for surgery from the viewpoint of the American Board of Surgery. *Bulletin, American College of Surgeons*, Jan. 1938, 23(1):33-34.

Editor. *The 1937 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 827 pp.

1938

Some accomplishments of thoracic surgery and its present problems. (Judd Lecture) *Surgery*, 3(4):485-505.

With Nathan Womack. Mixed tumors of the lung—so-called bronchial or pulmonary adenoma. (Hektoen Festschrift) *Arch. Pathol.*, 26:165-206.

Clinic on bronchiectasis. *Surg. Clin. North Am.*, 18(5):1189-1217.

Editor. *The 1938 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 781 pp.

1939

With E. M. Bricker. The inhibitory effects of sulfanilamide on wound healing. *J. Am. Med. Assoc.*, 112:2593-94.

Report on the American Board of Surgery. *Ann. Surg.*, 110(6):1115-17.

Editor. *The 1939 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 796 pp.

With B. Blades. The surgical treatment of intractable pulmonary hemorrhage. In: *New International Clinics*, vol. 4, ser. 2, pp. 77-83. Philadelphia: J. B. Lippincott Co.

1940

A plea for the earlier recognition of bronchiogenic carcinoma. In: *Frank Howard Lahey Birthday Volume*, pp. 199-202. Springfield, Ill.: Charles C Thomas Publishers.

With how little lung tissue is life compatible? (Mayo Festschrift) *Surgery*, 8(2):239-46.

Aneurysm of the ductus arteriosus, with a consideration of its importance to the thoracic surgeon. A report of two cases. (Written for Dean Lewis Volume) *Arch. Surg.*, 41:324-333.

1941

Foreword for Lilienthal Festschrift. *Journal of the Mount Sinai Hospital*, 7:243-44.

Two centuries of surgery. (Address before the Bicentennial Celebration of the University of Pennsylvania, September 1940) In: *Studies in the History of Science—University of Pennsylvania Bicentennial Conference*, pp. 65-87. Philadelphia: Univ. of Pennsylvania Press.

Editor. *The 1940 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 816 pp.

The National Research Council Committee on Surgery—a brief statement of its work. *Surg. Gynecol. Obstet.*, 72(2):541-42.

With N. A. Womack. Epithelial metaplasia in congenital cystic disease of the lung. Its possible relation to carcinoma of the bronchus. *American Journal of Pathology*, 17(5):645-54.

With Brian Blades. Pulmonary abscess and gangrene. In: *Nelson's Loose Leaf Medicine*, chap. 11, vol. 3, pp. 501-522C. New York: Thomas Nelson & Sons.

With Edward M. Kent. Experimental observations on the use of drugs of the sulfonamide group in the pleural space. (For Brunn Anniversary Volume) *J. Thorac. Surg.*, 11(2):198-202; also in *Medical-Surgical Tributes to Harold Brunn*, pp. 231-36. Berkeley: Univ. of California Press.

Editor. *The 1941 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 768 pp.

With Thomas Burford. The local use of sulfanilamide in the pleural cavity. *J. Thorac. Surg.*, 11(2):203-9.

1942

American surgery in a changing world. (Presidential Address—American College of Surgeons) *Surg. Gynecol. Obstet.*, 74:273-80.

With N. A. Womack. Developmental abnormalities of the lung and bronchiogenic carcinoma. *Arch. Pathol.*, 34:301-18.

With Brian Blades. The surgical treatment of bilateral bronchiectasis. *Surg. Gynecol. Obstet.*, 75:457-64.

With C. B. Mueller. Influence of hypophysectomy on the epithelization of wounds and on fibroplasia. *Arch. Surg.*, 45:534-41.

Foreword for *The Hospital Care of the Surgical Patient*, by George Crile, Jr., and Franklin L. Shively, Jr., p. 184. Springfield, Ill.: Charles C Thomas Publishers.

Editor. *The 1942 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc. 848 pp.

With Jacques Bruneau. A caution against too liberal use of citrated blood in transfusions. *Arch. Surg.*, 47(4):319-25.

With Saul Mackler. Aneurysm of the *ductus Botalli* as a surgical problem. *J. Thorac. Surg.*, 12:719-27.

1943

Editor. *The 1943 Year Book of General Surgery*. Practical Medicine Series. Chicago: Year Bk. Med. Pubs., Inc.

1944

The modern successful treatment of bronchiogenic carcinoma. *Surg. Clin. North Am.*, 24:1100-1107. (Bernard Hospital number)

What kind of medical officers do the armed services want? *Surg. Gynecol. Obstet.*, 79:217-19.

Indications for total pneumonectomy. *Dis. Chest*, 10:87-94. (Read before American College of Chest Physicians)

With Anibal Roberte Valle. Anenesis of the lung. *J. Thorac. Surg.*, 13:345-56.

1945

With Nathan A. Womack. The problem of the so-called bronchial adenoma. *J. Thorac. Surg.*, 14:106-19.

Medical education: a war casualty. *Wash. Univ. Med. Alumni Q.*, 8:147-53.

With N. A. Womack. Hypoglycemia. The islands of Langerhans. In: *A Textbook of Surgery*, pp. 303-6, 4th ed. Philadelphia: W. B. Saunders Co.

1946

Chest tumors. *J. Mo. State Med. Assoc.*, 43:837-39.

1947

Chest surgery. In: *The Doctors Talk It Over*, vol. 6, pp. 86-93. (Radio broadcast sponsored by Lederle Laboratories Division, American Cyanamid Company)

Some aspects of bronchiogenic carcinoma. (Lister Lecture) *Annals of the Royal College of Surgeons of England*, 1:248-64.

1948

With Thomas H. Burford and J. H. Mayer. Middle lobe syndrome. *Postgrad. Med.*, 4:29-34.

The work of the Empyema Commission in World War I. *North Carolina Medical Journal*, 9:5-6.

1949

With Norman C. Delarue. Carcinoma of the lung. Alveolar cell (pulmonary adenomatosis, jagziekte?). *J. Thorac. Surg.*, 18:237-51.

The first total pneumonectomy. *Texas Cancer Bulletin*, 2:2-4.

Bronchiogenic carcinoma. *Wisconsin Medical Journal*, 48:232-34.

Bronchiogenic carcinoma. *Surg. Gynecol. Obstet.*, 88:129-31.

1950

- With Ernest L. Wynder. Tobacco smoking as a possible etiological factor in bronchiogenic carcinoma. *J. Am. Med. Assoc.*, 143:329-36.
- With R. M. Peters, A. Rees, H. Black, and T. H. Burford. Respiratory and circulatory studies after pneumonectomy in childhood. *J. Thorac. Surg.*, 20:484-93.
- Primary carcinoma of the lung. *Dis. Chest*, 18:1-11.
- Changing concepts in surgery. *Postgrad. Med.*, 7:154-56. (Presidential Address, Interstate Postgraduate Medical Association)
- With R. Leonard Kemler. Studies on the influence of sex hormones on successful heterologous transplantation of human bronchiogenic carcinoma. *Cancer*, 3:735-38.
- The problem of bronchiogenic carcinoma. *Surg. Clin. North Am.*, 30:1259-77.
- Considerations of bronchiogenic carcinoma. *Ann. Surg.*, 132:176-88.

1951

- With Ernest Wynder. Etiologic factors in bronchiogenic carcinoma with special reference to industrial exposure. *American Medical Association Archives of Industrial Hygiene*, 4:221-35.
- With Martin Bergmann. Pneumonectomy for (severe) irradiation damage of the lung. *J. Thorac. Surg.*, 22:549-67.
- Primary cancer of the lung, with special consideration of its etiology. *Bulletin of the New York Academy of Medicine*, 27:261-76.
- Some questions about bronchiogenic carcinoma. (Bigelow Lecture) *N. Engl. J. Med.*, 245:389-96.

1953

- With Ernest L. Wynder and A. B. Croninger. Experimental production of carcinoma with cigarette tar. *Cancer Res.*, 13:855-64.

1954

- Remarks on the aetiology of bronchiogenic carcinoma. (From the Second Sir John Fraser Lecture delivered at the University of Edinburgh on May 11, 1954) *Lancet*, 1:1305-8.

1955

- A brief discussion of the etiology of bronchiogenic carcinoma. (Singer Lecture) *Dis. Chest*, 27:357-68.
- With Ernest L. Wynder and A. B. Croninger. Experimental production of carcinoma with cigarette tar. II. Tests with different mouse strains. *Cancer Res.*, 15:445-48.

1956

- Comments. Cancer research. *Cancer Res.*, 16:816-17. (L)
- René Leriche—hommage (1879-1955). (René Leriche Memorial Volume) *Lyon Chirurgical*, 52:8.
- A tribute to Rollin Turner Woodyatt. (This tribute was the first part of the First Rollin T. Woodyatt Lecture) *Quarterly Bulletin of the Northwestern University Medical School*, 30:286-89.

1957

- With V. Suntzef, A. B. Croninger, E. L. Wynder, and E. V. Cowdry. Use of Sebaceous-gland test of primary cigarette-tar fractions and of certain noncarcinogenic polycyclic hydrocarbons. *Cancer*, 10: 250-54.
- With Adele B. Croninger and E. L. Wynder. Experimental production of carcinoma with cigarette tar. III. Occurrence of cancer after prolonged latent period following application of tar. *Cancer*, 10:431-35.
- With Adele B. Croninger and E. L. Wynder. Experimental production of carcinoma with cigarette tar. IV. Successful experiments with rabbits. *Cancer Res.*, 17:1058-66.
- A brief account of the surgery of a half century ago and some personal reminiscences. *Medical Clinics of North America*, 41: 1061-70.
- A brief account of the development of thoracic surgery and some of its consequences. (First Annual Rollin T. Woodyatt Memorial Lecture delivered at Thorne Hall, Northwestern University Medical School, Chicago, 1955) *Surg. Gynecol. Obstet.*, 104:241-50.