NATIONAL ACADEMY OF SCIENCES

JAMES EWING

1866—1943

A Biographical Memoir by
JAMES B. MURPHY

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Biographical Memoir

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WASHINGTON D.C.

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The name of James Ewing is inseparably connected with the development of two important institutions. As the Professor of Pathology at Cornell Medical College and the only full-time professor in the early period, it was said that the development of the College was a reflection of the principles and mannerisms of James Ewing. The other institution was the Memorial Hospital (New York) where he was pathologist for many years. To quote from a statement of an associate, "The relationship of Ewing to the Memorial Hospital can best be expressed in the words of Emerson, 'Every institution is but the lengthening shadow of some man.' Dr. Ewing is the Memorial Hospital" (Adair). His very great influence was effected, in both instances, without a formal authoritative position, for he was neither Dean of the Cornell Medical College nor Director of Memorial Hospital during their formative years.

James Ewing was born in Pittsburgh on Christmas day 1866. His father, Thomas, came from a staunch Scotch, Scotch-Irish, Presbyterian family, of whom it was said "had produced men whose intellect and energy had helped mold the institutions of wherever they settled." Thomas Ewing, after graduation from Jefferson College, became a teacher, and continued in this profession until he was 36 years of age. He then studied law and became a judge in the Court of Common Pleas in Pittsburgh, a position he held until his death at 69 years of age. He was considered a leading citizen of that city, was an elder of the Presbyterian Church and a director of the Theological Seminary. In characterizing his father, James Ewing wrote, "If I had any hereditary bents they were intensified by the example of my father of whom I may only say he was a man of tireless energy, pure intellect and complete self effacement."

Dr. Ewing's mother, Julia Hufnagel, of Stockbridge, Massachusetts, was of German ancestry. She graduated in the first class from Mt. Holyoke College, and she also became a teacher. Her favorite pursuits outside her educational activities were music and social work.

Thus, James Ewing grew up in a rather stern, intellectual and religious environment. He was known as a sensitive boy, mentally alert, inquisitive, and adventurous. He was physically

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active, intensely interested in sports, an interest he retained throughout life. It was said of him that everything he attempted he did with furious attention. When he was 12 years old he collected and mounted butterflies and his collection was of such excellence that it became a permanent exhibition in a Pittsburgh museum. It was at about the same period that he acquired a microscope and became deeply immersed in the study of insects, thus early starting microscopy, which was destined to be his major life work. At 14 he developed osteomyelitis of the femur from which he was bedridden for two years, and this was followed by a longer period of intense suffering and invalidism, that left him a permanent cripple.

During this bedridden period his instruction was continued by a tutor, and he was developing an outstanding quality that was prominent through his educational period, namely receptiveness to mental training. Ewing attributed his no small talent in the use of language to the influence of his tutor, who had "a marvelous way in which he balanced delicate shades of meaning in Latin and Greek phrases." Exercise of this facility was considered by Ewing as a lesson in close thinking and it made a permanent impression on his own mental processes. By the time he entered Amherst College in 1884, he was able to read both Latin and Greek poetry at sight.

At Amherst he was fortunate to come under the influence of Charles Edward Garman, Professor of Philosophy, who did much to help Ewing free himself of self-consciousness and a feeling of inferiority from his infirmity. He developed an ardent interest in sports, and in spite of his lameness became a good tennis player. He graduated from Amherst in 1888 and was elected to Phi Beta Kappa the same year.

In the fall of 1888 he entered the College of Physicians and Surgeons of New York and was in the first class to graduate after this institution had become affiliated with Columbia University. Little is recorded of his medical school period except his remark that "I ran headlong into that rare personality, T. Mitchell Prudden, and to him I owe my main tendencies and conceptions as a physician and as a pathologist. At the time I was wearing a Phi Beta Kappa key that seemed as large as a cow bell and at the same time a certain weight of self esteem. I soon lost both of them." It is certain that during these years he developed a keen interest in pathology, evidenced by his

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expressed belief that the pursuit of problems in a pathological laboratory is the choicest field in medicine. He spent much time in the hospital laboratory during his clinical internship at Roosevelt Hospital and produced his paper entitled "A Study of the Leucocytosis of Lobar Pneumonia." It was also during this period that his interest in the blood developed, which eventually led to his first book, Clinical Pathology of the Blood (1901).

The years immediately following the completion of Ewing's internship (1893-98) were restless ones. As there were few academic or research positions that paid a living wage, Ewing felt forced to enter private practice, but he continued his interest in the scientific side of medicine. He held such positions as Tutor in Histology—Columbia University, 1893-97; Clark Fellow—Columbia University, 1896-99; Instructor of Clinical Pathology, 1897-98; and spent a period in the study of pathology in Europe. It soon became evident that the practice of medicine was not his forte, and this effort was abandoned in 1898 when, during the Spanish-American War, he became a Contract Surgeon in the Army and was assigned to Camp Wikoff. Here his thirst for knowledge soon led him into an investigation of malaria, and he published several papers on this subject.

In 1899 he was appointed Professor of Pathology in the newly organized Cornell University Medical College, where, as the only full-time professor, as already noted, he exerted considerable influence on the development of this institution. He proved to be a prodigious worker and a forceful, stimulating teacher. He was profoundly affected by the death of his young wife, after less than three years of marriage, from a complication of pregnancy. Following this he became even more absorbed in work, and his interest in the pathogenesis of the group of conditions related to the toxemias of pregnancy became almost an obsession.

The focussing of his interest upon cancer may be traced to the establishment by Mrs. Collis P. Huntington of the C. P. Huntington Fund for Cancer Research in 1902. It was stipulated that the income from this Fund be expended for cancer research in the Loomis Laboratory, associated with Cornell Medical College, under the direction of Dr. Ewing. One of his few investigations based on animal experimentation was published during the early years of administration of this Fund. However, he gave much time and attention to the direction of the work, which served to enhance his reputation as an authority

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on cancer, and he soon became known as the outstanding cancer pathologist in New York.

By 1910 some 50 papers had been published from the Loomis Laboratory on cancer, under the support of the Huntington Fund. By this time Ewing had arrived at the conviction that the best hope for advancing knowledge in cancer was to study the disease in man, a conviction that he held throughout his life. He proposed a plan to the New York Hospital by which a commission was to be set up to carry out clinical cancer study in a general hospital. The first contact with Dr. James Douglas, who was destined to play a leading role in Ewing's future, was made through this Cancer Commission. The development of the New York Hospital plan evidently ran into difficulties for soon Ewing recommended that the project be suspended until larger facilities and more complete organization could be provided. With the financial backing of Dr. Douglas, Ewing approached the Memorial Hospital with a proposal for the assignment of a certain number of beds for the clinical study of cancer. This institution, organized in 1884 as a cancer hospital, had found difficulty in maintaining its status as such. By 1912 Dr. Douglas had given $100,000 for the endowment of 20 beds for clinical research work, and equipment for an X-ray plant and clinical laboratory. Dr. Douglas, a mineralogist and mining engineer, was an enthusiast with definite convictions and was considered by many as the most gifted and many sided man of his time. He undoubtedly had considerable influence on Ewing in the development of the Memorial Hospital and was certainly responsible for the interest in radio therapy developed by this institution. In 1913 he took Ewing on a tour of Europe to investigate the use of radium as a therapeutic agent in cancer, and later, with Dr. Howard Kelley, financed the production of radium in this country. Dr. Douglas's share of the output was donated to the Memorial Hospital.

When Ewing took up his work as pathologist to the Memorial, he held several strong opinions: first, as already noted, he believed that cancer research should be centered around the cancer patient. He did not believe that surgery was the final answer to the problem but that other methods of treatment must be assiduously pursued. He espoused the idea of special cancer hospitals and the concept of the disease as a medical specialty. Needless to say, his point of view was bitterly criti-

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cized by a section of the medical profession. Nevertheless he did bring the Memorial Hospital back from being simply another general hospital to the original intentions of its founders and he succeeded in attracting able men into the field as cancer specialists. His determination to establish the possibilities and limitations of X-ray and radium therapy was also criticized by some leaders in the profession as unjustified human experimentation. But Ewing pursued his course unperturbed, and today, while there is not universal acceptance, the idea of special cancer hospitals and of cancer as a medical specialty has been widely adopted.

With the Douglas backing, Ewing gained a foothold in Memorial Hospital which he developed through the force of his personality to a point where it was said in 1912 that he had assumed full responsibility for the direction of its policies, though his official position was only that of pathologist to the institution. Under his guidance the Memorial Hospital attained a worldwide recognition. The department of pathology had a long and distinguished record of leadership in the clinical classification and the diagnostic histology of tumors. It became an outstanding educational center to which surgeons and pathologists were drawn from many parts of the world to acquire concentrated experience and instruction in the diagnosis and classification of the many forms of cancer.

In 1931, on Ewing's retirement as Professor of Pathology at Cornell Medical College, he was made full-time director of Memorial Hospital, thus acquiring the title for a position he had held through his personality for many years. In 1939, at 73 years of age, he retired as Director and became Consulting Pathologist.

Ewing's influence was by no means confined to the two institutions he served so handsomely. Through his interest in research he was one of the organizers of the American Association for Cancer Research and served many terms as officer and council member. Through his discussions and constructive criticisms of the papers presented at the meetings he contributed in no small way to the raising of the standard of cancer research in this country. He was also one of the founders of the American Society for the Control of Cancer (now American Cancer Society) in 1913, served in various offices, and was on the governing board for more than 30 years. During his long years of association, he prepared or edited a large part of

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the popular educational material distributed by the Society. His prestige did much to secure the acceptance by the medical profession of the idea of lay education for the recognition of early signs and symptoms of cancer. His passion for truth and integrity led him to oppose bitterly the inclusion in the publications or slogans of the Society any statement or figures that could be construed as misleading by a hair's breadth.

Few men have endured as much physical suffering as Ewing did during his life: first, as noted above, from osteomyelitis that left him a permanent cripple at 14 years of age, for years intense suffering from trifacial neuralgia, later in life urinary calculosis, and finally cancer of the bladder. The loss of his young wife after less than three years of marriage had a profoundly saddening effect upon his life. It was said of him that adversity, suffering, disappointment, and sorrow left their mark on him not in the form of bitterness or disillusionment but in increasing sensitiveness for the misfortune of others. "His sympathy and kindliness became almost legendary during his lifetime and the very legend of his benignity impressed itself on his character"—(Stewart). That this benignity was not of the mere sentimental variety was shown by his intolerance of sham, hypocrisy, and mental laziness, which led him to be an unsparing critic.

Perhaps his most important contribution was his book, Neoplastic Diseases, first published in 1919. In regard to this publication, an associate records that "for ten years Ewing worked with zealous ardor, holidays, nights, week ends, stopping for minutes only to fight the paroxysms of tic douloreux." This book immediately became the standard reference and textbook of the world and has continued to hold this position, through its several editions, for the 30 years since its first publication. His discrimination in estimating scientific contributions and his ability to coordinate new facts gave high value to his occasional publications or lectures. Those in which he placed current contributions in proper perspective were masterpieces of clarity and critical analysis.

While Ewing is known best as a cancer pathologist, Dr. William H. Welch called attention to the fact that there was scarcely a domain in pathology which he did not cultivate, were it morphological, chemical, clinical or experimental. He referred to Ewing as an eminent scholar, an eminent trainer

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of scholars, an international leader in pathology. Among the chief fields of investigation may be mentioned the following: leucocytosis in disease, 1895; ganglion cells, 1896; status lymphaticus, 1895, 1918; malaria, 1897-99; diseases of the blood, 1899-1902; variola, 1901-03; toxemia of pregnancy, 1904-07; cancer, 1895-1939.

Ewing was an outspoken opponent of the idea that there could be an all-embracing cause or cure for cancer, maintaining that cancer does not represent a single disease but is a generic term covering a broad department of biology and a universal potentiality of tissue cells. He was an experimenter, not in the narrow sense of the pure laboratory worker, but in the field of human experiment. In the early days every patient subjected to treatment by X-rays, radium or by various biologic products constituted an experiment. These were by no means always encouraging but they nevertheless yielded new data, piling up references for future modifications, with possibly larger promise towards success. To him are attributed three of the most important developments in the cancer field: the modern cancer hospital, cancer clinic, and public health cancer program.

"He himself succumbed to the disease toward the solution and early diagnosis of which the major portion of his life had been devoted. Signs of a benign disease from which he had suffered for years, yet which had disappeared after appropriate treatment, recurred with but little change and hence failed to announce the onset of a totally new disease until the latter was far advanced and hopeless"—(Stewart).

As an indication of the respect in which Ewing was held, the following memorials have been established in the short time since his death: the Ewing Professorship in Neoplastic Diseases, at Cornell Medical College; the Ewing Memorial Fund, which supports two annual lectureships and undergraduate student training in tumor pathology; the James Ewing Hospital, a 300-bed City hospital for cancer patients.

Dr. Ewing was elected to the National Academy of Sciences in 1935. He died on May 16, 1943.

Much of the material in regard to Dr. Ewing's background and early life was obtained from an extensive file of information collected by Dr. Hayes Martin. The author gratefully acknowledges his indebtedness to Dr. Martin for the use of this valuable material.

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KEY TO ABBREVIATIONS USED IN BIBLIOGRAPHY

Am. J. Med. Sci. = American Journal of the Medical Sciences
Am. J. Obst. = American Journal of Obstetrics
Am. J. Path. = American Journal of Pathology
Am. J. Roent. = American Journal of Roentgenology
Am. J. Surg. = American Journal of Surgery
Am. Soc. Cont. Cancer = American Society for the Control of Cancer
Ann. Surg. = Annals of Surgery
Arch. Int. Med. = Archives of Internal Medicine
Arch. Neurol. Psychopath. = Archives of Neurology and Psychopathology
Arch. Path. = Archives of Pathology
Arch. Surg. = Archives of Surgery
Brit. Med. J. = British Medical Journal
Bull. Internatl. Assn. Med. Mus. = Bulletin of the International Association of Medical Museums
Bull. N. Y. Acad. Med. = Bulletin of the New York Academy of Medicine
Canad. J. Med. Surg. = Canadian Journal of Medicine and Surgery
Canad. Lancet Pract. = Canadian Lancet and Practitioner
Canad. Med. Assn. J. = Canadian Medical Association Journal
Canad. Pract. = Canadian Practitioner
J. Am. Med. Assn. = Journal of the American Medical Association
J. Cancer Res. = Journal of Cancer Research
J. Exp. Med. = Journal of Experimental Medicine
J. Infect. Dis. = Journal of Infectious Diseases
J. Med. = Journal of Medicine
J. Med. Res. = Journal of Medical Research
J. Nerv. Ment. Dis. = Journal of Nervous and Mental Disease
Med. News = Medical News
Med. Officer = Medical Officer
Med. Rec. = Medical Record
Mil. Surg. = Military Surgeon
Mo. Bull. N. Y. State Dept. Health = Monthly Bulletin of the New York State Department of Health
N. Y. Med. J. = New York Medical Journal
N. Y. State J. Med. = New York State Journal of Medicine
Pittsburgh Med. Rev. = Pittsburgh Medical Review
Proc. Ann. Cong. Med. Ed. = Proceedings of the Annual Congress on Medical Education
Proc. Assn. Am. Med. Coll. = Proceedings of the Association of American Medical Colleges
Proc. N. Y. Path. Soc. = Proceedings of the New York Pathological Society
Proc. Path. Soc. Phila. = Proceedings of the Pathological Society of Philadelphia
Pub. Health Rep., U. S. P. H. S. = Public Health Report of the United States Public Health Service
Rev. Gastroenterol. = Review of Gastroenterology
Surg., Gynec. Obst. = Surgery, Gynecology and Obstetrics

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Trans. Assn. Am. Physn. = Transactions of the Association of American Physicians

Trans. Coll. Physn. Phila. = Transactions of the College of Physicians of Philadelphia

Virchow's Arch. = Virchow's Archiv für pathologische anatomie und physiologie und klinische medizin

BIBLIOGRAPHY OF JAMES EWING

1892

The Syms operating building of the Roosevelt Hospital. Pittsburgh Med. Rev., *6*, 362.

1893

A study of the leucocytosis of lobar pneumonia. N. Y. Med. J., *58*, 713.

1894

Guanin gout in the hog. Proc. N. Y. Path. Soc., p. 107.

Occlusion of the ileocaecal valve by a plug of mucus. Extreme interstitial emphysema of the lungs. Proc. N. Y. Path. Soc., pt. 2, p. 43.

Lipomatosis of the heart. Proc. N. Y. Path. Soc., pt. 2, p. 89.

Rupture of the bladder and peritonitis. Proc. N. Y. Path. Soc., pt. 2, p. 106.

1895

The leucocytosis of diphtheria under the influence of serum therapy. N. Y. Med. J., *62*, 161.

Toxic hypoleucocytosis. N. Y. Med. J., *61*, 257.

Acute infectious disease with intestinal lesions. Proc. N. Y. Path. Soc., p. 22.

Hydronephrosis (two cases). Proc. N. Y. Path. Soc., p. 60.

Rupture of the bladder and peritonitis. Med. Rec., *47*, 282.

1896

(With P. Bailey) A contribution to the study of acute ascending (Landry's) paralysis. N. Y. Med. J., *64*, 1; J. Nerv. Ment. Dis., *23*, 316.

Rupture of the aorta. Proc. N. Y. Path. Soc., p. 18.

Primary pernicious anaemia. Proc. N. Y. Path. Soc., p. 59.

Bacillus aërogenes capsulatus. Proc. N. Y. Path. Soc., p. 111.

1897

The lymphatic constitution and its relation to some forms of sudden death. N. Y. Med. J., *66*, 37.

Total thrombosis of the left pulmonary artery. Proc. N. Y. Path. Soc., p. 11.

Adenoma of the kidney; total thrombosis of the vena cava. Proc. N. Y. Path. Soc., p. 26.

Subglottic abscess: death from oedema of the glottis. Proc. N. Y. Path. Soc., p. 68.

Filaria sanguinis stained. Proc. N. Y. Path. Soc., p. 69.

DrFarahCancerCenter.com

1898

Notes on clinical diagnosis (J. T. Doherty, N. Y.).

Studies on ganglion cells: a preliminary communication. Proc. N. Y. Path. Soc., p. 112; Med. Rec., *53*, 513.

Studies on ganglion cells. Arch. Neurol. Psychopath., *1*, 263.

The differential diagnosis by means of blood examination between tropical and malarial fevers and typhoid fever, including their etiology, prevention and treatment. Med. Rec., *54*, 494.

Comparative morphology of malarial plasmodia. Med. News, *73*, 782.

(With W. H. Thomson) A case of acute leukaemia. Med. Rec., *53*, 333.

(With A. Jacobi) Septic perforation of the right internal carotid artery: autopsy five months after death. Trans. Assn. Am. Physn., *13*, 326.

A case showing the bothriocephalus latus. Proc. N. Y. Path. Soc., p. 80.

Malignant adenoma of the stomach. Proc. N. Y. Path. Soc., p. 136.

Leukaemia. Proc. N. Y. Path. Soc., p. 137.

Demonstration of some noteworthy forms and combinations of malarial parasites observed at Camp Wikoff. Proc. N. Y. Path. Soc., p. 229.

1899

Preliminary report on the results of blood examinations at Camp Wikoff, August and September, 1898. N. Y. Med. J., *69*, 114, 149.

Papilloma of the larynx: suffocation. Proc. N. Y. Path. Soc., p. 94.

Tuberculous ulcer at the base of the epiglottis. Proc. N. Y. Path. Soc., p. 97.

General miliary tuberculosis: thrombosis of superior mesenteric artery. Proc. N. Y. Path. Soc., p. 97.

1901

Clinical pathology of the blood (Lea Brothers and Co., Phila. Ed. 1, 1901; ed. 2, 1903).

Conjugation in the asexual cycle of the tertian malarial parasite. N. Y. Med. J., *74*, 145.

Malarial parasitology. J. Exp. Med., *5*, 429.

A case of malarial nephritis with massing of parasites in the kidney. Am. J. Med. Sci., *122*, 426; Trans. Assn. Am. Physn., *16*, 450.

Remarks on the origin of "colloid carcinoma of the peritoneum." Proc. N. Y. Path. Soc., n.s., *1*, 11.

(With W. Coleman) A case of glanders in the human subject. Proc. N. Y. Path. Soc., n.s., *1*, 103.

1902

Contribution to the pathological anatomy of malarial fever. J. Exp. Med., *6*, 119.

The present status of serum therapy in typhoid fever. Med. News, *80*, 577.

Preliminary report on a study of smallpox. Trans. Assn. Am. Physn., *17*, 208.

Schmaus, Hans: A textbook of pathology and pathological anatomy. (Edited by James Ewing) (Lea Brothers and Co., Phila.).

Vaccine bodies in variola. Proc. N. Y. Path. Soc., n.s., *2*, 59.

The relation of streptococcus pyogenes to variola. Proc. N. Y. Path. Soc., n.s., *2*, 72.

DrFarrahCancerCenter.com

A case of mixed quartan and aestivo-autumnal malaria: a meningocele. Proc. N. Y. Path. Soc., n.s., *2*, 116.

Demonstration of hemosiderin reaction in corneal vaccine bodies. Proc. N. Y. Path. Soc., n.s., *2*, 151.

(With I. Strauss) Limits of a specific reaction in the serum test for blood. Proc. N. Y. Path. Soc., n.s., *2*, 152.

1903

(With I. Strauss) Precipitins and their medicolegal use. Med. News, *83*, 871, 925.

(With W. Coleman) A case of septicemic glanders in the human subject. J. Med. Res., *9*, 223.

Differentiation of monkey and human blood by the serum test. Proc. N. Y. Path. Soc., n.s., *3*, 14.

"Identity," *in* Legal Medicine and Toxicology (Ed. by Peterson and Haines) (W. B. Saunders and Co., Phila.) *1*, 62. "The signs of death," ibid., p. 104. "Sudden death," ibid., p. 138.

1904

Comparative histology of vaccinia and variola. J. Med. Res., *12*, 500.

Comparative morphology of vaccine bodies. Proc. N. Y. Path. Soc., n.s., *3*, 203.

1904-1905

The structure of vaccine bodies in isolated cells. J. Med. Res., *13*, 233.

1905

Syllabus of lectures on inflammation and associated conditions. Monograph.

Some aspects of the problem of immunity in typhoid fever. Proc. Path. Soc. Phila., *8*, 65.

The pathological anatomy and pathogenesis of the toxemia of pregnancy. Am. J. Obst., *51*, 145.

1905-1906

Observations of spirochaetae in syphilis. Proc. N. Y. Path. Soc., *5*, 105.

1906

The pathological anatomy of the thyroid gland in Graves' disease. Proc. N. Y. Path. Soc., n.s., *6*, 71.

Exophthalmic goitre from the standpoint of serum therapy. N. Y. Med. J., *84*, 1061.

(With S. P. Beebe) A study of the biology of tumor cells. Brit. Med. J., *2*, 1559.

A histological study of the thyroid in 40 cases of Graves' disease. Trans. Assn. Am. Physn., *21*, 567.

(With C. G. L. Wolf) The clinical significance of the urinary nitrogen. Am. J. Med. Sci., *131*, 751.

1906-1907

(With S. P. Beebe) A study of the so-called infectious lymphosarcoma of dogs. J. Med. Res. *15*, 209.

DrFarrarCancerCenter.com

A case of primary carcinoma of the liver. Proc. N. Y. Path. Soc., n.s., *6*, 168.

1907

(With C. G. L. Wolf) The clinical significance of the urinary nitrogen.—II. The metabolism in the toxemia of pregnancy. Am. J. Obst., *55*, 289.

Hemolysis in eclampsia. Science, *26*, 408.

Nitrogenous metabolism in typhoid fever. Med. Rec., *71*, 537.

The morphologic diagnosis of pathogenic protozoa. N. Y. Med. J., *85*, 1000.

Recent studies of syphilis. N. Y. State J. Med., *7*, 177.

1907-1908

Note on involution forms of spirochaete pallida in gummata. Proc. N. Y. Path. Soc., n.s., *7*, 166.

1908

Chorio-epithelioma. Am. J. Obst., *57*, 418.

Myxoma and diffuse hyperplasia of a full-term placenta. Proc. N. Y. Path. Soc., n.s., *8*, 84.

An intra-uterine perithelioma. Proc. N. Y. Path. Soc., n.s., *8*, 85.

Cancer problems. Harvey Lecture. Arch. Int. Med., *1*, 175; Harvey Lectures, 1907–1908, p. 34 (1909).

A classification of acidoses. Trans. Assn. Am. Physn., *23*, 31.

Acidosis and associated conditions. Arch. Int. Med., *2*, 330, 448.

1909

(With C. G. L. Wolf) The clinical significance of the urinary nitrogen.—III. Nitrogenous metabolism in typhoid fever. Arch. Int. Med., *4*, 330.

The epithelial cell changes in measles. J. Infect. Dis., *6*, 1.

Teratoma testis. Proc. N. Y. Path. Soc., n.s., *9*, 83.

1910

Animal experimentation and cancer. J. Am. Med. Assn., *54*, 267.

Chorioma: a clinical and pathological study. Surg., Gynec. Obst., *10*, 366.

The pathogenesis of the toxemia of pregnancy. Am. J. Med. Sci., *139*, 828.

The pathogenesis of the toxemia of pregnancy. *Part of:* Symposium on the toxemias of pregnancy, etc. Proc. Path. Soc. Phila., *13*, 65.

A case of Delhi boil. Proc. N. Y. Path. Soc., n.s., *10*, 12.

A case of chronic or unresolved pneumonia, polyserositis and senile malnutrition. Proc. N. Y. Path. Soc., n.s., *10*, 90.

1911

(With W. B. Coley) Acute lymphatic tuberculosis with purpura hemorrhagica. Trans. Assn. Am. Physn., *26*, 178.

The public and the medical profession. Med. Rec., *80*, 1209.

Teratoma testis and its derivatives. Surg., Gynec. Obst., *12*, 230.

Primary thrombosis of superior mesenteric vein. Proc. N. Y. Path. Soc., n.s., *11*, 106.

DrFarrenCancerCenter.com

1912

The treatment of cancer on biological principles. N. Y. Med. J., *96*, 773.

1913

Endothelioma of lymph nodes. J. Med. Res., *28*, 1.
The cancer research hospital. N. Y. Med. J., *98*, 1241.
Extra testicular teratoma testis. Proc. N. Y. Path. Soc., n.s., *13*, 26.
Teratoma testis: chorioma of liver and lungs. Tridermal metastases in lymph nodes. Proc. N. Y. Path. Soc., n.s., *13*, 28.

1914

Precancerous diseases and precancerous lesions, especially in the breast. Med. Rec., *86*, 951.

1915

The hospital intern year as a requirement for medical lecensure. J. Am. Med. Assn., *65*, 670.
The incision of tumors for diagnosis. N. Y. Med. J., *102*, 10.

1916

(With L. D. Bristol et al.) Free tumor diagnosis as a function of state public health laboratories. Am. Soc. Cont. Cancer.
The thymus and its tumors; report of three cases of thymoma. Surg., Gynec. Obst., *22*, 461.
Principles and experiments in medical education. J. Am. Med. Assn., *66*, 635.
Pathological aspects of some problems of experimental cancer research. J. Cancer Res., *1*, 71.

1917

Radium therapy in cancer. J. Am. Med. Assn., *68*, 1238.
The influence of war on medical science. J. Am. Med. Assn., *69*, 249.
Incising tumors for diagnostic purposes. Med. Rec., *91*, 376.

1918

The relation of gastric ulcer to cancer. Ann. Surg., *67*, 715.
Miliary aspects of status lymphaticus. J. Am. Med. Assn., *71*, 1525.
Some factors influencing results of radium therapy. Radium, *11*, 73.
Influence of radium on cancer tissues. Am. J. Roent., *5*, 413.

1919

The place of pathological anatomy in military medicine. Mil. Surg., *44*, 273.
Pulmonary lesions of influenza pneumonia and a method of museum preparation. Proc. N. Y. Path. Soc., n.s., *19*, 15.
Some late and distant effects of radium. J. Cancer Res., *4*, 45.
A case of thymoma. Proc. N. Y. Path. Soc., n.s., *19*, 156.
(With R. B. Greenough and J. M. Wainright) What we know about cancer. Chicago, Am. Med. Assn. A handbook for the medical profession.
Neoplastic diseases (W. B. Saunders and Co., Phila. Ed. 1, 1919; ed. 2, 1922; ed. 3, 1928).

DrFarrahCancerCenter.com

1920

The aims and methods of cancer diagnosis. Med. Rec., *98*, 200.

Report on the teaching of pathology. Proc. Assn. Am. Med. Coll., *18*, 136.

1921

The structure of nerve tissue tumors with reference to radium therapy. J. Nerv. Ment. Dis., *53*, 130; N. Y. Med. J., *113*, 420.

Tumors of nerve tissue in relation to treatment by radiation. Am. J. Roent., *8*, 497.

Der Einfluss Virchow's auf die medizinische Wissenschaft in Amerika. Virchow's Arch., *235*, 444.

Diffuse endothelioma of bone. Proc. N. Y. Path. Soc., n.s., *21*, 17.

1922

A review and classification of bone sarcomas. Arch. Surg., *4*, 485.

Experiences in the collection of museum material from army camp hospitals. Bull. Internatl. Assn. Med. Mus., *8*, 27.

The life and work of Dr. Lewis A. Stimson. Address delivered on Mrs. Dora Wheeler Keith's presentation to Cornell University of her portrait of Dr. Stimson, in Stimson Hall, January 9, 1922.

An analysis of radiation therapy in cancer. The Mutter Lecture, Trans. Coll. Physn. Phila., 3s., *44*, 190.

The mode of action of radiation upon carcinoma. Am. J. Roent., *9*, 331.

Preventable cancer. Health News, Mo. Bull. N. Y. State Dept. Health, n.s., *17*, 244.

1923

"Identity," *in* second ed. Legal Medicine and Toxicology (Ed. by Peterson, Haines and Webster) (W. B. Saunders and Co., Phila.) *1*, 132. "The signs of death," ibid., p. 175. "Sudden death," ibid., p. 209.

(With W. S. Stone) An unusual alteration in the natural history of a giant-cell tumor of bone. Arch. Surg., *7*, 280.

1924

Influence of radiation therapy on the study of cancer. Canad. Pract., *49*, 95.

Further report on endothelial myeloma of bone. Proc. N. Y. Path. Soc., n.s., *24*, 93.

Is radiation an epoch in cancer therapy? Canad. Pract., *29*, 414.

1925

Rational pathology and the new therapeutics. Practical Lectures, 1923-24 series, p. 116.

The diagnosis of cancer. J. Am. Med. Assn., *84*, 1.

Some consideration on the etiology of cancer. Canad. J. Med. Surg., *57*, 117; Canad. Lancet Pract., *64*, 217.

Twenty years' progress in American teaching of pathology. Proc. Ann. Cong. Med. Ed., p. 21.

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1925-1926

The chances of death from carcinoma. Assn. Life Insurance Med. Directors of America, Abstr. of Proc., *13*, 50.

1926

The relation of trauma to malignant tumors. Am. J. Surg., *40*, 30.
Tissue reactions to radiation. Caldwell Lecture, Am. J. Roent., *15*, 93.
Radiation osteitis. Acta Radiologica, Stockholm, *6*, 399.

1927

Prevention of Cancer. Cancer Control, p. 165; Suppl. to Surg., Gynec. Obst., *44* (May).
Some phases of intraoral tumors, with special reference to treatment by radiation. Radiology, *9*, 359.
Memorial Hospital. N. Y. State J. Med., *27*, 1004.

1928

The classification and treatment of bone sarcoma. Report Internatl. Conference on Cancer (third), London, p. 365.
The causal and formal genesis of cancer. Report Internatl. Conference on Cancer (third), London, p. 1.
(With A. R. Stevens) Adenocarcinoma of the testis in the adult. Ann. Surg., *88*, 1074.

1929

Lympho-epithelioma. Am. J. Path., *5*, 99.
The relation of cancer to old age. Am. J. Med. Sci., *177*, 461.
Radiosensitive epidermoid carcinomas. Am. J. Roent., *21*, 313.
Cancer as a public health problem. Pub. Health Rep., U.S.P.H.S., *44*, 2093 (1929); Med. Officer, *42*, 205.
Radiosensitivity. Radiology, *13*, 313.
(With R. B. Greenough and J. C. V. Gerster) The medical service available for cancer patients in the United States. J. Am. Med. Assn., *93*, 165.
Special aspects of neoplasms in aged. Bull. N. Y. Acad. Med., n.s., *5*, 104.
The causes and diagnosis of intraoral carcinoma. Prepared for and published in cooperation with the Am. Soc. for Cancer Control, Chicago Dent. Soc. Official Bull., *9*, 6.

1930

Factors determining radioresistance in tumors. Radiology, *14*, 186.
Some types of radioresistant tumors with results of treatment. Am. J. Surg., n.s., *8*, 142.
Problems of melanoma. Brit. Med. J., *2*, 852.

1932

The university and the medical profession. Bull. N. Y. Acad. Med., *8*, 1.

1934

Early experiences in radiation therapy. Janeway Memorial Lecture, delivered before the American Radium Society during the American

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Congress of Radiology, Chicago, Ill., Sept. 25-30, 1933. Am. J. Roent., *31*, 153.

Cancer. Citizens' Aid Society Memorial Address, presented at the annual meeting of the Minnesota State Medical Association, Rochester, May 24, 1933. Minnesota Med., *17*, 53.

1935

Some results of modern clinical cancer research. Read before the Cincinnati Academy of Medicine and First Counsellor District of the Ohio State Medical Association and the Cancer Council, Nov. 12, 1934. J. Med., *16*, 15.

General significance of bacterial infection in cancer. Libro de Oro dedicado al Prof. Dr. Angel H. Roffo (A. Guidi Buffarini, Buenos Aires) p. 375.

Modern attitude toward traumatic cancer. Arch. Path., *19*, 690.

The general pathological conception of cancer. Canad. Med. Assn. J., *33*, 125.

Fascial sarcoma and intermuscular myxoliposarcoma. Arch. Surg., *31*, 507.

1936

Problems in histological tumor diagnosis. Reports II. Internatl. Cong. Scient. and Soc. Campaign against Cancer, *1*, 215.

1937

The development of laboratory service in a cancer hospital. Ann. Surg., *106*, 715.

1938

Adaptation as a factor in the cure of cancer by radiation. Am. J. Roent., *39*, 165.

The public and the cancer problem. Science, n.s., *87*, 399.

1939

General pathology of lymphosarcoma. Bull. N. Y. Acad. Med., *15*, 92.

1940

Etiological indications of early gastric cancer. Rev. Gastroenterol., *7*, 305.

A survey of cancer in childhood. Cancer in childhood (C. V. Mosby Co., St. Louis, 1940) p. 13.

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