An important result of these investigations has been the construction and preliminary test of apparatus for generating very penetrating x-rays, which possesses several advantages as compared with machines hitherto available. The penetrating x-rays have their practical application in the treatment of internal cancer. The present apparatus consists of a Van de Graaff belt generator, coupled with a modified Lauritsen x-ray tube, in which all aspects of the equipment have been satisfactorily tested for production of x-rays up to 700,000 volts.

SYMPOSIUM ON IONIC PHYSICS AT CORNELL UNIVERSITY

ARRANGEMENTS have been made for holding a Symposium on Ionic Physics at Ithaca, N. Y., during the week end immediately preceding the opening of the Cornell 1935 Summer Session.

A three-day program (July 4, 5, 6) devoted to a discussion of photoelectricity and thermionics has been prepared. It is the purpose of this symposium to provide a comprehensive survey of these fields, with ample time and opportunities for discussion.

The various phases of the subjects will be introduced by the following invited papers:

Thursday Morning, July 4, 9:30 o'clock (E.S.T.)

"The Present Status of Thermionics," Saul Dushman, General Electric Company.

"Surface Ionization Potentials," J. A. Becker, Bell Telephone Laboratories.

Thursday Afternoon, 2 o'clock

"Optical Factors in the Photoelectric Effect," H. E. Ives, Bell Telephone Laboratories.

"Photoelectric Conductivity," F. C. Nix, Bell Telephone Laboratories.

Friday Morning, 9 o'clock

"Photoelectricity, Experiment *versus* Theory," L. A. DuBridge, University of Rochester.

"Theory of Metals and Electron Emission Phenomena," J. C. Slater, Massachusetts Institute of Technology.

Friday Afternoon, 2 o'clock

"Fluorescence and Photochemistry, Applied to the Assimilation Process of Carbon Dioxide," J. Frank, The Johns Hopkins University (visiting lecturer in physics, Cornell Summer Session).

Saturday Morning, 8:30 o'clock

"Electron Optics," C. J. Davisson, Bell Telephone Laboratories.

"Properties of Thoriated Tungsten Filaments," W. B. Nottingham, Massachusetts Institute of Technology.

"The Electrical Properties of Adsorbed Films on Metals," Irving Langmuir, General Electric Company.

There will be a registration fee of one dollar for those attending the symposium.

Arrangements will be made for housing the group in attendance, including families, in one of the university dormitories for the nights of July 3, 4 and 5, at $2.00 per night per person ($5.00 per person for the three nights). Reservations for such rooms should be made in advance with the Manager of Residential Halls, Morrill Hall, Ithaca, N. Y. For further information, address Professor R. C. Gibbs, Rockefeller Hall, Ithaca, N. Y.

MEETINGS OF SIGMA XI

A CHAPTER of Sigma Xi was installed at Smith College on May 1. Dr. Harold Clayton Urey, of Columbia University, was the guest lecturer; Professor George Howard Parker, of Harvard University, national president, and Professor Edward Ellery, of Union College, national secretary, were the installing officers. In addition to those already members of Sigma Xi, fourteen members of the faculty were initiated. Delegates from Sigma Xi chapters of thirteen colleges attended the installation ceremony.

Dr. E. C. Stakman, plant pathologist at the University of Minnesota, was guest speaker on May 16 at the Sigma Xi initiation banquet at Cornell University. He spoke on the subject "Routing the Red Scourge of Wheat." Dr. Stakman also gave a public Sigma Xi lecture on "Rubber Growing in Liberia and the East Indies" on May 17. He was the guest of the department of plant pathology during the entire week.

At the first annual meeting of the Tulane Chapter of the Society of the Sigma Xi twenty-one associate members were initiated. The annual address, entitled "A Problem of Three Bodies," was given by the retiring president, Professor Herbert E. Buchanan, head of the department of mathematics of Tulane University. The officers for the coming year are as follows: *President,* Dr. Ernest Carroll Faust, professor of parasitology; *Vice-president,* Professor William B. Gregory, of the department of sanitary engineering; *Secretary-Treasurer,* Dr. Harley N. Gould, head of the department of biology, Newcomb College; additional members of the *Executive Committee,* Dr. Nola Lee Anderson, department of mathematics, Newcomb College, and Dr. Edward S. Hathaway, head of the department of zoology, Tulane University.

The District of Columbia Chapter of Sigma Xi at a meeting on May 14 elected the following officers: *President,* Dr. William Bowie, chief, Division of Geodesy, U. S. Coast and Geodetic Survey; *Vice-president,* Dr. Frederick V. Coville, Bureau of Plant Industry; *Secretary,* Dr. V. A. Pease, Bureau of Chemistry and Soils; *Treasurer,* William Lerch, National Bureau of Standards. At this meeting the following

new members were presented: Dr. Oscar Sherman Adams, senior mathematician, U. S. Coast and Geodetic Survey; Dr. Sidney Fay Blake, senior botanist, Bureau of Plant Industry, and Dr. John Robbins Mohler, chief, Bureau of Animal Industry. Mrs. Elizabeth Aldrich Bridgeman, recently elected an alumna member at Tulane, was presented at the request of that chapter.

AWARD TO DR. KRAUS OF THE WILLARD GIBBS MEDAL

DR. CHARLES A. KRAUS, professor of chemistry at Brown University and director of the Newport Rogers Laboratory, was presented with the Willard Gibbs Medal of the Chicago Section of the American Chemical Society at a ceremony at the Stevens Hotel on May 24. Professor Roger Adams, of the University of Illinois, president of the society, presented the medal, one of the highest scientific honors bestowed in the United States, to Dr. Kraus, citing his "valuable contributions to the knowledge of reactions in liquid ammonia, enlargement of the understanding of the chemical behavior and characteristics of metals and extensive development of the field of the elements germanium and gallium."

An ammonia world was described by Professor Edward Curtis Franklin, of Stanford University, who, speaking on "Kraus, the Man," traced the development of ammonia research since a group at the University of Kansas, including Dr. Kraus, Professor Franklin and Professor Hamilton P. Cady, founded a new school of chemists in 1896. The title of Dr. Kraus's address was "Concerning Chemistry and Chemists."

Dr. Kraus received the Nichols Medal of the New York Section of the American Chemical Society in 1923 for his work with non-aqueous solutions. He has lectured at the University of Chicago, Western Reserve University and Harvard University, and has been consulting chemist for the U. S. Bureau of Mines, the Chemical Warfare Service and the Fixed Nitrogen Research Laboratory, as well as for various technical developments.

The 1935 Willard Gibbs Medal Jury of Award was composed as follows:

Professor Adams; Dr. Phoebus A. Levene, Rockefeller Institute, New York; Professor Joel H. Hildebrand, University of California; Professor Ross A. Gortner, University of Minnesota; Professor Hugh S. Taylor, Princeton University; Professor Julius Stieglitz, University of Chicago; Professor Moses Gomberg, University of Michigan; Carl S. Miner, director of the Miner Laboratories, Chicago; Professor Franklin; Professor H. I. Schlesinger, University of Chicago; Dr. Willis R. Whitney, General Electric Company; Dr. Harrison E. Howe, editor of *Industrial and Engineering Chemistry.*

Previous medalists were: Svante Arrhenius, of Sweden; Mme. Marie Curie, of France; Sir James C. Irvine, of Scotland; Dr. Richard Willstätter, of Munich, and the following Americans: Theodore W. Richards, Leo H. Baekeland, Ira Remsen, Arthur A. Noyes, Willis R. Whitney, Edward W. Morley, William M. Burton, William A. Noyes, F. G. Cottrell, J. Stieglitz, G. N. Lewis, Moses Gomberg, John Jacob Abel, William Draper Harkins, Claude S. Hudson, Irving Langmuir, Phoebus A. Levene, Edward Curtis Franklin and Harold C. Urey.

On the following day, Dr. Kraus read a paper on "The Present State of the Problem of Electrolytes," under the joint auspices of the University of Chicago and the Chicago Section of the American Chemical Society.

THE RETIREMENT OF PROFESSOR ERNEST MERRITT

THE retirement of Professor Ernest Merritt, after forty-six years of service in the department of physics, was the occasion for the gathering at Cornell University of over one hundred Cornell physicists on May 4 in his honor. In the afternoon Professor Merritt presided at a meeting of the Physics Seminary, in which he has been active since it was organized by Professor E. L. Nichols forty-five years ago. Papers were presented by Dr. Frances G. Wick, professor of physics at Vassar College, and Dr. W. W. Coblentz, physicist at the National Bureau of Standards.

At a dinner in Willard Straight Hall held in the evening in honor of Professor Merritt, letters from his former associates were read by Professor R. C. Gibbs, chairman of the physics department. Addresses were made by Dr. Livingston Farrand, president of Cornell University, Dr. Ernest Blaker, physicist with the Goodrich Rubber Company, formerly professor of physics at Cornell, and Dr. J. O. Perrine, physicist with the American Telephone and Telegraph Company. Professor Merritt recalled early incidents in the development of physics at Cornell and spoke optimistically of the future.

Professor Merritt, in addition to his long service in the department of physics, of which he was the head from 1919 until 1934, was dean of the Graduate School from 1909 to 1914 and for three years served as faculty representative on the Board of Trustees. He was editor of *The Physical Review* for twenty years, when it was conducted under the auspices of Cornell University, and was the first secretary of the American Physical Society of which he later became president. During the war he was active in research at the Naval Experiment Station at New London.