Nier, Alfred Otto Carl, Minnesota '36, "Systematic Study of the Isotopic Constitution of the Elements."

Wooldridge, Dean Everett, California Institute of Technology '36, "An Investigation of the Nuclear Properties of Some of the Rare Gaseous Isotopes."

Yearian, Hubert Jose, Purdue '34, "Intensity Measurements in Electron Diffraction."

*In Chemistry:*

Adelson, David E., Florida '35, "Polycyclic Hydrocarbons Derived from Retene."

Beach, John Y., California Institute of Technology '36, "The Investigation of Molecular Structure by the Electron Diffraction Method."

Lord, Richard Collins, Jr., Johns Hopkins '36, "The Raman Spectra of Compounds of Deuterium."

*In Mathematics:*

Dribin, Daniel Maccabaeus, Chicago '36, "Arithmetic of Quadratic Forms."

Fialkow, Aaron, Columbia '36, "Geometric Characterization and Classification of Single-Parameter Families of Plane Curves."

Jacobson, Nathan, Princeton '34, "Pseudo-linear Transformations. Abstract Derivatives and Lie Algebras. Hypercomplex Numbers."

Tompkins, Charles Brown, II, Michigan '36, "Phases of Differential Geometry."

F. K. RICHTMYER,
*Secretary*

## AWARD OF THE CHANDLER MEDAL TO PROFESSOR GIAUQUE

THE Charles Frederick Chandler Medal of Columbia University was presented on May 28 to Professor William Francis Giauque, of the University of California, discoverer of a method of magnetic cooling by which temperatures approaching absolute zero can be obtained.

Dr. George B. Pegram, acting dean of the graduate faculties of the university, presented the medal to Professor Giauque at a gathering of scientific men in Havemeyer Hall. Professor Giauque, who has made a systematic study of very low temperatures and entropy measurements, delivered the medal address on "The Production and Use of Temperatures Below One Degree Absolute."

In his address Dr. Pegram said that Professor Giauque's work "beautifully illustrates the power of experimental skill and ingenuity when directed by keenest appreciation of the guidance afforded by theory. A leader among those chemists who have with great effect been applying modern quantum theory to thermodynamic investigation, he has contributed to the more unified view of nature that chemistry and physics are achieving."

Professor Giauque's most extensive investigations have consisted in the extremely accurate determination, from 0.24 degree above absolute zero to room temperature, of the specific heats and heats of transition of hydrogen chloride, hydrogen bromide, hydrogen iodide, oxygen, nitric oxide and hydrogen. From these he has calculated the entropy of each of these gases. He has also been the first to calculate, from spectroscopic data for the same gases, entropy values which are more accurate than those based on the measurements of specific heats.

Professor Giauque stated in his address that "the results of these investigations have given strong support to the validity of both the third law of thermodynamics and quantum statistics. This type of work is largely responsible for the present confidence in the reliability of the many free energies of gases which have been very accurately determined by the application of quantum statistical methods to detailed spectroscopic observations."

The Chandler Medal, awarded annually by the trustees of Columbia University for conspicuous work in the field of chemistry, was established in 1910 in honor of the late Dr. Charles Frederick Chandler, a founder and president of the American Chemical Society, pioneer in industrial chemistry and professor at Columbia from 1864 to 1925.

Professor Giauque was born in Niagara Falls, Ontario, on May 12, 1895. He was graduated from the University of California in 1920, and held a fellowship there during the next two years, taking the doctor's degree in 1922. After five years as instructor, he was named assistant professor at California in 1927, associate professor in 1930 and full professor in 1934.

In 1929, following the announcement by Professor Giauque and Dr. Johnston of two new isotopes of oxygen, Professor Giauque shared the Pacific Division prize of the American Association for the Advancement of Science for the most important scientific contribution reported by a resident of the Pacific Division at its June meeting. He is a member of the American Chemical Society and a fellow of the American Physical Society. He has been vice-president of Commission XI of the Institut International du Froid since 1928.

The committee of award was composed of Professor A. W. Thomas, chairman; Dr. Leo H. Baekeland and Professor Arthur W. Hixson.

Former medalists include: L. H. Baekeland, W. F. Hillebrand, W. R. Whitney, F. G. Hopkins, E. F. Smith, R. E. Swain, E. C. Kendall, S. W. Parr, Moses Gomberg, J. A. Wilson, Irving Langmuir, J. B. Conant, G. O. Curme, Jr., J. G. Lipman.

## IN HONOR OF PROFESSOR HERBERT OSBORN

AT the commencement exercises of the Ohio State University the doctorate of laws will be conferred on

Dr. Herbert Osborn, research professor emeritus of entomology, and the doctorate of science will be conferred on Dr. Ralph D. Mershon, engineer and inventor, New York City, and on Dr. Roy D. McClure, surgeon-in-chief at the Henry Ford Hospital, Detroit. In awarding the degree to Professor Osborn the faculty committee on honorary degrees writes:

Professor Osborn has been the most successful teacher in the world on economic entomology, as judged by the number and success of his students.

He has made this university known internationally as a center for this sort of training, and men have come to work with him from as far away as South Africa. His students are scattered over the globe, teaching and doing administrative and other work in South America, Japan, India, Australia, and Africa.

Born at Lafayette, Wis., Professor Osborn is a graduate of Iowa State College. He has honorary degrees from that school and from the University of Pittsburgh in recognition of his scientific achievements. While located in Iowa, he was a faculty member at the state college, entomologist at the experiment station, later state entomologist, and president of the Iowa Academy of Science.

Coming to Ohio in 1898 as a member of the university faculty, he also became director of the university's Lake Laboratory and director of the Ohio Biological Survey.

He has served as consulting entomologist for the Maine experiment station and for the Tropical Plant Research Foundation, he is a past vice-president of one of the sections of the American Association for the Advancement of Science, and was for 20 years editor of the *Annals* of the Entomological Society of America.

Professor Osborn is a past president of the Entomological Society of America, the Association of Economic Entomologists, the American Microscopical Society, the Ohio Academy of Science, the Society for the Promotion of Agricultural Science, and a member of numerous other groups.

He has written several books and nearly five hundred papers for scientific journals of the United States and Europe. Since 1933 he has held the rank of professor emeritus at Ohio State.

## AWARD OF THE TWO HUNDRED AND FIFTY THOUSANDTH BAUSCH AND LOMB MICROSCOPE TO PROFESSOR NOVY

DURING the spring of this year the Bausch and Lomb Optical Company manufactured its 250,000th microscope, the culmination of sixty years of endeavor, the first completed microscope having been shown at the Philadelphia Centennial Exposition in 1876. Recognizing its debt to American scientific men and educators who have been so helpful in the development of its microscopes, the company decided to award this instrument to an American scientist who had made outstanding contributions to science through researches with the use of the microscope. The company asked the American Association for the Advancement of Science to name one who in their estimation deserved this distinction.

A committee chosen by the association agreed unanimously in selecting Dr. F. G. Novy, professor of bacteriology and chairman of the executive committee of the Medical School of the University of Michigan. The presentation of the award will be made by Edward Bausch, chairman of the board of directors of the Bausch and Lomb Company, at a complimentary luncheon given to members of the American Association at the Rochester meeting on June 18.

This occasion will be the fiftieth anniversary of Dr. Novy's graduation from the University of Michigan and his entrance into scientific work. During the past fifty years, Dr. Novy, as an investigator and as a teacher, has contributed liberally and significantly to the development of bacteriology. Following his graduation from the University of Michigan, he pursued graduate studies there until 1888, at which time he went to Berlin and spent a year studying in the laboratory of Robert Koch. He is one of the very few living Americans who have had this privilege. He then returned to the University of Michigan to introduce instruction in bacteriology for medical students, and to continue graduate studies, receiving the degrees D.Sc. and M.D. in 1890 and 1891.

Thus, with training in chemistry, medicine and bacteriology, Dr. Novy was exceptionally well prepared to carry out bacteriological investigations. Immediately, he was recognized for his studies concerning the chemistry of bacteria, ptomaines, leucomaines and nucleins. The etiology of diphtheria, yellow fever and plague also received his attention. He developed techniques for the cultivation of anaerobic bacteria and discovered new species of anaerobes. Public health problems received his constant attention, especially the use of antitoxins and the practice of disinfection. In many of his investigations, the microscope was used continually, for example, in the study of trypanosomes and hematozoa of birds, mosquito flagellates, relapsing fever spirochetes and Leishman-Donovan bodies.

During two generations, Dr. Novy has instructed and inspired thousands of medical students in bacteriology and public health.

This microscope which is to be presented to Dr. Novy embodies the very latest features of research microscope design. It is of the reversed type, the arm being in front of the instrument so as to give free access to the object, stage, objective, sub-stage and mirror, and thus offering greater convenience and comfort to the user. In order to provide extreme rigidity, the inclination joint has been eliminated. This general design was suggested by Dr. Lester W. Sharp, of Cornell University, and his associate, Dr. L.