In the third lecture the remarkable confirmation which these postulates have received from experiments on the bombardment of atoms with electrons and the emission and absorption of spectral lines was discussed in some detail.

The fourth and fifth lectures were devoted to an account of the formal development of the theory. It has been possible to obtain a general method for the fixation of the stationary states of systems with certain periodicity properties, and to establish a connection between the frequencies, intensities and polarization of spectral lines and the motion in the stationary states which in the limit corresponds to that existing in the classical theory. In this way it has been possible to account in all details for the fine-structure of the spectra of hydrogen and ionized helium as well as the effect of electric and magnetic fields on these spectra.

In the last lecture it was shown how it has been possible by means of the interpretation of spectra afforded by the theory to obtain a picture of the way in which the atoms of all the elements are built up. This picture affords an understanding of the characteristic relations between the properties of the elements, and may be said to be at least the first step in the accomplishment of the program of atomic physics.

THE EXPEDITION TO TIBET OF THE NATIONAL GEOGRAPHIC SOCIETY

JOSEPH F. ROCK, leader of the expedition to Tibet of the National Geographic Society, in a recent report to the Society, states that he has collected 914 kinds of Rhododendrons. The collection includes Rhododendrons from the richest indigo blue to orange yellow, crimson and absolutely black flowered species. It includes trees of thirty feet to prostrate plants two or three inches high. The leaves are as different as the flowers.

Mr. Rock is doing his plant collecting despite constant menace of outlaws. When he arrived at Likiang, his Yunnan province headquarters, he found 1,200 bandits encamped just north of the town, ready at any moment to sack it. He estimates there were 30,000 bandits in Yunnan alone, in August, not counting the numerous Tibetan border brigands.

Mr. Rock writes: "I am working with 23 men. Caravans are high and it is difficult to get any, no matter what one offers. The muleteers are afraid the robbers will take their mules and if the robbers don't intervene Chinese military officials may commandeer them for months without pay."

An added romance of plant hunting attaches to the shipments from this expedition because of the long, long trail they must travel to reach this country. One consignment of specimens first had to be dragged up and down lofty mountain ranges and borne through deep gorges and dense jungles for 28 days, from Nguluko to Tengyueh. Thence it went to Bhamo and from there was shipped down the Irrawaddy to begin its trans-ocean voyage.

Mr. Rock covered one unknown region, between Yunlung and Cheechuan, along the Hpi Kiang River, not yet on any map. He made his way along the Yangtze Gorge, 13,000 feet deep, and explored Mount Dyiualoko, 20,000 feet, and Haba Shan and Chiantashan, each about 18,000 feet. It is from the mountain slopes that plants are being shipped which will be suitable for planting in Glacier National Park.

The first pictures obtained of the priests of the mysterious, bejewelled Moso tribesmen were taken by Mr. Rock, showing these dignitaries in their curious dances and devil-exorcising ceremonies.

The range of plant explorations so far has covered the upper Mekong, Salwin, Yangtze and the Salwin-Irrawaddy divide. One objective of the expedition is to find a blight-resisting chestnut tree. Mr. Rock writes that he is shipping a species of the Castanopsis (related to the chestnuts) which develops trees with trunks from 4 to 6 feet in diameter. He adds: "*Pinus armandi* is a stately tree, the cones are huge and the seeds large and delicious. I shall send you a mule load."

THE EDWARD WILLIAMS MORLEY CUP

THROUGH the generosity of Alpha Chi Sigma, professional chemistry fraternity, a cup in honor of Professor E. W. Morley, emeritus professor of chemistry at Western Reserve University, who died last February, has been offered to the freshman student in chemistry who attains the highest standing for the year. The award will be based on classroom work, laboratory work and general interest in the science. The prize will be known as the "Edward Williams Morley Cup."

The letter, addressed to Professor William McPherson of the department of chemistry and dean of the Graduate School, giving the details of the award, follows:

My dear Dr. McPherson:

It is the pleasure of the Lambda Chapter of Alpha Chi Sigma to present to the department of chemistry, the Ohio State University, a scholarship cup to be awarded in accordance with the following conditions:

1. The scholarship cup shall be awarded to that student in freshman chemistry who is regarded as the leader of the class judged from his records, both in the classroom and in the laboratory and from his general interest in the science.

2. This cup shall be awarded annually at the end of the spring quarter and the recipient shall be the permanent possessor of the same.

3. This cup shall be known as the Edward Williams Morley Cup, in honor of that great American teacher and

investigator whose work was carried on largely in the State of Ohio.

4. The committee of award shall consist of the following persons:

Professor William McPherson, Professor William Lloyd Evans, and one active member selected by the Lambda chapter of Alpha Chi Sigma.

The Lambda chapter respectfully submits the foregoing and trusts that the suggestions will meet with your approval.

Very truly yours,

The Committee on a scholarship award of Alpha Chi Sigma.

FREDERICK H. MACLAREN, *chairman*,
RAYMOND S. CARTER, *president*,
GEORGE W. RUHL,
CHARLES C. CLARK.

THE NOBEL PRIZE IN PHYSICS

AS was announced recently the Nobel Prize in physics for 1923 has been awarded to Dr. R. A. Millikan of the California Institute of Technology. Previous awards of the prize in physics have been as follows:

In 1901: to Professor W. C. Röntgen, Munich, for the discovery of the rays subsequently named after him.

In 1902: in two equal shares to Professor H. A. Lorentz, Leiden, and Professor P. Zeeman, Amsterdam, for researches upon the influence of magnetism on the phenomenon of radiation.

In 1903: one half to H. A. Becquerel, professor at École Polytechnique, Paris, for the discovery of spontaneous radio-activity and the other half to Professor P. Curie and Mme. Marie Curie, Paris, for their united work of investigation respecting the phenomena of radiation discovered by Professor Becquerel.

In 1904: to Lord Rayleigh, London, for his researches respecting the density of the most important gases and his discovery of argon made in connection therewith.

In 1905: to Professor P. Lenard, Kiel, for his investigations of cathode rays.

In 1906: to Professor J. J. Thomson, Cambridge, England, for his investigations, theoretical and experimental, concerning the passage of electricity through gases.

In 1907: to Professor A. A. Michelson, Chicago, for his optical instruments of precision and his spectroscopic and metrological investigations carried out therewith.

In 1908: to Professor G. Lippmann, Paris, for his method, based upon the phenomenon of interference, of photographically reproducing colors.

In 1909: one half each to G. Marconi, Engineer, London, and Professor F. Braun, Strassburg, for their contributions to the development of wireless telegraphy.

In 1910: to J. D. van der Waals, Professor Emeritus, Amsterdam, for his labors respecting the equation of state for gases and liquids.

In 1911: to Professor W. Wien, Würzburg, for his discoveries relative to the laws of heat radiation.

In 1912: to G. Dalén, Superintendent Engineer, Stockholm, for his inventions of self-acting regulators for use in conjunction with gas accumulators in providing illuminants for lighthouses and lighting-buoys.

In 1913: to Professor H. Kamerlingh Onnes, Leiden, for his researches upon the properties of matter at low temperatures, which among other results led to the production of liquid helium.

In 1914: to Professor M. von Laue, Frankfort-on-Main, for his discovery of the diffraction of Röntgen rays in crystals.

In 1915: in two equal shares to Professor W. H. Bragg, London, and W. L. Bragg, Cambridge, England, for the results of their labors in investigating crystal structures by means of Röntgen rays.

In 1916: the prize was not awarded.

The prize for 1917: was awarded in 1918 to Professor Ch. G. Barkla, Edinburgh, for his discovery of the characteristic Röntgen radiation of the chemical elements.

The prize for 1918: was awarded in 1919 to Professor M. Planck, Berlin, for the services rendered to the development of physics by his discovery of the elementary quanta.

In 1919: to Professor J. Stark, Greifswald, for his discovery of the Doppler effect with canal rays and of the decomposition of spectrum lines by electric fields.

In 1920: to Director Ch. E. Guillaume, Sèvres, in recognition of the services he has rendered to the attainment of exact measurements in physics through his discovery of anomalies in nickel steel alloys.

In 1921: to Professor Albert Einstein, of the University of Berlin, for his work in relativity.

In 1922: to Professor Niels Bohr, of the University of Copenhagen, for his work on problems of atomic structure.

THE CENTENARY OF JOSEPH LEIDY

THERE was held on Thursday, December 6, a meeting in Philadelphia to commemorate the centenary of the birth of Joseph Leidy. The following program was arranged:

(At the Academy of Natural Sciences)

Opening remarks: By the honorary chairman, DR. R. A. F. PENROSE, JR., president of the Academy of Natural Sciences of Philadelphia.

Presentation of delegates.

General estimate of Leidy's influence upon scientific thought and development: DR. EDWARD S. MORSE, Peabody Academy of Science, Salem, Massachusetts.

Zoological work: DR. HERBERT S. JENNINGS, Johns Hopkins University.

1:30 P. M. Luncheon

Exhibition of Leidyana

2:30 P. M.

Paleontological and geological work: DR. WILLIAM B. SCOTT, Princeton University.

Botanical work: DR. WITMER STONE, The Academy of Natural Sciences of Philadelphia.

Mineralogical work: DR. FRANK W. CLARKE, United States Geological Survey.

Announcement of the Leidy Medal Foundation in the Natural Sciences

8:15 P. M.

(In the Mitchell Hall of the College of Physicians, Twenty-second above Chestnut Street)

The Joseph Leidy lecture in science: PROFESSOR HENRY FAIRFIELD OSBORN, president of the American Museum