

cerned. Many other facts of interest besides those above discussed have come to light in our investigation, but the limited space of this paper will not permit of their discussion, nor of the submission here of the detailed data which furnish the basis for the discussion above given.

C. B. LIPMAN,
L. W. FOWLER

THE AMERICAN PHYSICAL SOCIETY

THE seventy-fifth meeting of the Physical Society was held in Randall-Morgan Laboratory of the University of Pennsylvania, December 29, 1914, to January 1, 1915. It was a joint meeting with Section B of the American Association for the Advancement of Science. Morning and afternoon sessions were held on Tuesday, Wednesday and Thursday. Vice-president Anthony Zeleny, of Section B, presided on Tuesday and Wednesday afternoons, and President Merritt at the other four sessions.

On Tuesday afternoon the program consisted of the Vice-presidential Address before Section B on "Recent Evidence for the Existence of the Nucleus Atom," by A. D. Cole, and the presidential address of the American Physical Society on "Luminescence," by Ernest Merritt. On Wednesday afternoon there was a symposium on the Use of Dimensional Equations, led by E. Buckingham, who was followed by A. C. Lunn, A. G. Webster, W. S. Franklin and others.

The following program of papers was presented:

"An A. C. Bridge for the Measurement of the Dielectric Loss and Dielectric Constant at High Voltages and Low Frequencies," by Chester A. Butman.

"Influence of the Concentration of Electrolyte upon Electrode Potentials," by Arthur W. Ewell.

"A New Method of Obtaining a Hysteresis Loop," by W. N. Fenninger.

"On Rotation and Magnetization," by S. J. Barnett.

"Note on Thermo E.M.F.'s in which the Resultant Peltier Effect is Zero," by H. C. Barker.

"Linear Resistance Change with Temperature of Certain Molten Metals," by E. F. Northrup.

"The Effect of Temperature on the Dielectric Strength, the Dielectric Loss and the Dielectric Constant of Paraffine Oil," by Chester A. Butman.

"A Preliminary Note on the Variation of Stray Power Losses in a Dynamo," by W. N. Fenninger.

"Relation Between the Energy of the Cathode Rays and the Frequency of the X-Rays Produced by Them," by William Duane.

"Thermionic Currents from a Wehnelt Cathode," by W. Wilson.

"Mobility of Ions at Different Temperature and Constant Gas Density," by Henry A. Erikson.

"The Radioactive Content of Certain Minnesota Soils," by James C. Sanderson. (Read by H. A. Erikson.)

"Conducting Gas Layer at a Metallic Surface," by G. W. Stewart.

"X-Rays From the Electrical Discharge," by Elizabeth R. Laird.

"X-Rays Produced by Slow-moving Cathode Rays," by Elizabeth R. Laird.

"Light Due to Recombination of Ions," by C. D. Child.

"Electric Furnace Evidence on the Relation of Spectrum Lines Having Constant Differences in Wave-Number" (by title), by Arthur S. King.

"The Mechanical Equivalent of Light," by H. E. Ives, W. W. Coblentz and E. F. Kingsbury.

"Fluorescence of the Uranyl Salts under X-Ray Excitation," by Frances G. Wick.

"The Efficiency of Energy Transformation in the Corona Method of Precipitating Fumes," by W. W. Strong.

"Leakage of Gas Through Quartz Tubes" (by title), by E. C. Mayer.

"A New Method for Measuring Gravity at Sea, with Some Trans-Pacific Observations," by Lyman J. Briggs.

"The Oxidation of Nitrogen," by W. W. Strong.

"The Alleged Dissymmetrical Broadening of the D Lines of Sodium," by E. A. Eckhardt.

"Exhibit of Mechanical Models Illustrating (a) Subdivision of Alternating Current Between Two Branches in Parallel, (b) The Alternating Current Transformer, (c) Coupled Circuits in Wireless Telegraphy," by W. S. Franklin.

"Some Causes of Variation in the Sensitivity of Moving Coil Galvanometers," by Paul E. Klopsteg. (Presented by A. Zeleny.)

"A New Standard Phone and Phonometer for any Pitch," by A. G. Webster.

"A New Form of Radiation Pyrometer" (by title), by S. Leroy Brown.

"The Doppler Effect in X-Ray Spectra and Application to the Kinetic Theory of Solids," by L. Gilchrist and D. A. Keys.

"On Acoustic Impedence, and an Approximate Theory of Conical Horns," by A. G. Webster.

"Vapors with Positive Specific Heat in Energy Conversion" (by title), by J. E. Siebel.

"Progress of B-Particles through Matter," by A. F. Kovarik and L. W. McKeethan.

"A Thirty-two Element Harmonic Synthesizer," by Dayton C. Miller.

"The Result of Plotting the Separation of Homologous Pairs against Atomic Numbers instead of Atomic Weights," by Herbert E. Ives and Otto Stuhlmann.

"Beaded Lightning," by W. J. Humphreys.

"A Practical Measurement of Colors," by H. E. Wetherill.

"Preliminary Note on a Mercury-vapor Tube

Oscillator," by B. Liebowitz. (Introduced by M. I. Pupin.)

On Tuesday evening a public lecture, complimentary to the citizens of Philadelphia and illustrated by experiments and the lantern, was given by Dayton C. Miller. On Wednesday evening a successful dinner for physiologists was arranged by Professor H. C. Richards at the Hotel Normandie. This was enjoyed by about seventy members. The members of the society were the guests of the University of Pennsylvania at lunch each day of the meeting. The registration of the meeting was 117. The attendance at the various sessions was exceptionally uniform and varied between 100 and 150.

A. D. COLE,
Secretary

SOCIETIES AND ACADEMIES

THE BOTANICAL SOCIETY OF WASHINGTON

THE one-hundredth regular meeting of the Botanical Society of Washington was held in the Crystal dining room of the new Ebbitt Hotel, at 6 P.M., December 1, 1914. One hundred and four members and eight guests were present. A dinner was served at which were featured several dishes made from plants which have been introduced to this country by the U. S. Department of Agriculture. Drs. W. Ralph Jones, J. S. Cooley, H. V. Harlan and Messrs. G. F. Gravatt, G. H. Godfrey, L. M. Hutchins, Paul Popenoe and R. G. Pierce were unanimously elected to membership. The remainder of the evening was given to a special program dealing with the early history and growth of the society with the following papers:

Mr. M. B. Waite, "The Botanical Seminar and the Early Development of Plant Pathology in Washington."

The Botanical Seminar was founded in 1893. The purpose of the members was to make the meetings as informal as possible. The monthly meetings were held at the rooms of the various members. There were no officers other than the speaker of the evening, who usually was the person entertaining the Seminar. There was no constitution or by-laws. Refreshments were served and very frank discussion and criticism was encouraged. In 1901 the number of candidates for membership became so great that this method of holding meetings became impossible and the Botanical Seminar was merged with the Washington Botanical Club to form the present Botanical Society of Washington. The speaker sketched briefly the development of the work in plant pathology

in Washington from the early beginning when the pathological work was a very small branch of the botanist's duties, up to the present large body of investigators.

Letters from the Boys in Washington: MR. DAVID FAIRCHILD.

This consisted in the reading of actual letters from various early workers in plant pathology and physiology and brought home to those present the actual condition of things at that time more vividly than could have been done in any other way.

The Washington Botanical Club: DR. EDWARD L. GREENE.

The Washington Botanical Club was founded in 1898 with a very informal organization quite similar to that of the Botanical Seminar. The Botanical Club included more especially the workers in systematic botany. Dr. Greene was the first and only president. In 1901 it was merged with the Botanical Seminar to form the Botanical Society of Washington.

Systematic Botany: MR. F. V. COVILLE.

Mr. Coville gave briefly some of the more important features of systematic botany in Washington from the early days up to the present time, emphasizing the use of types of species which was a direct contribution of the United States Department of Agriculture.

Early History of Physiological and Plant Breeding Work in the Department of Agriculture: MR. WALTER T. SWINGLE.

This briefly sketched the beginning of the now extensive work in plant pathology and plant breeding in the U. S. Department of Agriculture.

On Tuesday, January 5, 1915, at 8:30 P.M., the Botanical Society of Washington met in joint session with the Washington Academy of Sciences in the Assembly Hall of the Cosmos Club. Professor J. C. Bose gave an illustrated lecture on "The Response of Plants."

The one-hundred-and-first regular meeting of the Botanical Society of Washington was held January 9, 1915, at 1:30 P.M., in the west wing of the new Department of Agriculture building. Thirty-four members were present. Messrs. F. Tracy Hubbard, Howard S. Coe, Luther P. Byars and Dr. L. O. Kunkel were unanimously elected to membership. The resignation of Mr. H. C. Gore, as treasurer of the society, was accepted and Mr. C. E. Leighty was elected to that office. No scientific program was presented.

PERLEY SPAULDING,
Corresponding Secretary