

production of the frequency ν . This is true, and therein lies its strength, just as the strength of the first and second laws of thermodynamics lies in the fact that they are true irrespective of a mechanism. The Bohr theory is a theory of atomic structure; it is not a theory of radiation, for it merely states what energy relations must exist when radiation, whatever its mechanism, takes place. As a theory of atomic structure, however, it is thus far a tremendous success. The radiation problem is still the most illusive and the most fascinating problem of modern physics. I hope to discuss it at a later time.

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GEORGE CHRISTIAN HOFFMANN

GEORGE CHRISTIAN HOFFMANN, formerly assistant director, chemist, and mineralogist of the Geological Survey of Canada, died in Ottawa, March 8, 1917. He was born June 7, 1837, in London, England, and studied at the Royal School of Mines under Sir Henry de la Beche, under Hoffman, Percy, Smyth, Stokes, Ramsay, Huxley and Willis. He spent several years as chemist in research laboratories of England, and later 1861, wrought in Natal, South Africa, in the Mauritius, later again in Australia. In 1872 he joined the technical staff of the Geological Survey of Canada, Montreal, under Dr. Alfred R. C. Selwyn. Dr. Hoffmann was a fellow of the Institute of Chemistry of Great Britain, a fellow of the Royal Society of Canada and of many other distinguished bodies. He is the author of many numerous reports published by the Geological Survey of Canada and the Department of Mines. While in Australia he devoted considerable time in the phyto-chemical laboratory attached to the Melbourne Botanic Garden in Victoria; inquiries into the tanning properties of the barks of native trees; investigation into the amount of potash in various indigenous trees, besides experiments in reference to various acids, tar and other prod-

ucts. Besides the above enquiry into the suitability for paper-making of various fibrous substances were carried on by Dr. Hoffmann. The essential oils of certain trees, dyeing properties and coloring matter of others and researches on tea, opium and various economic products were carried out in conjunction with Baron Ferdinand Mueller, the distinguished Australian botanist. His bibliography contains valuable reports and papers of analyses and determinations of Canadian ores, minerals and economic products characterizing the rock formations of Canada and elsewhere, including rare and new species.

H. M. AMI

BRITISH EMBASSY,
WASHINGTON, D. C.

SCIENTIFIC EVENTS

LECTURES ON SANITARY SCIENCE AT RUTGERS COLLEGE

IN connection with the recently established course in sanitary science, Rutgers College has inaugurated a series of public lectures. The list follows:

November 27. Professor Jacques Loeb, of the department of experimental biology of the Rockefeller Institute, New York City, "Regeneration."

February 5. Dr. J. G. Needham, professor of entomology, Cornell University, "Action."

February 28. Dr. G. M. Potter, of the Bureau of Animal Industry, Washington, D. C., "Abortion Diseases of Cattle."

March 7. Professor A. E. Taylor, Ph.D., University of Pennsylvania, "Agricultural Production in Germany under Blockade."

March 8. Mr. Allen Hazen, C.E., New York City, "Purification of Water Supplies."

March 14. Dr. K. F. Kellerman, associate chief of the Bureau of Plant Industry, Washington, D. C., "Relation of Algae to Public Water Supplies."

March 19. Dr. J. F. Anderson, director of Squibb's Laboratory, New Brunswick, N. J., "Anaphylaxis."

March 21. Dr. Theobald Smith, director of the department of animal pathology of the Rockefeller Institute, Princeton, N. J., "Research in Animal Diseases with Reference to Agriculture and the Industries."

March 22. Dr. Theobald Smith, director of the department of animal pathology of the Rockefeller

Institute, Princeton, N. J., "Research in Animal Diseases in their relation to Public Health."

April 3. Dr. C. L. Alsberg, chief of the Bureau of Chemistry, United States Department of Agriculture, Washington, D. C., "The Administrative Control of our Food and Drug Laws."

April 11. Dr. J. F. Anderson, director of Squibb's Laboratory, New Brunswick, N. J., "Public Health Administration."

April 17. Dr. W. T. Sedgwick, director of the department of biology and public health, Massachusetts Institute of Technology, Boston, Mass., "Preparation for Public Health Work."

April 18. Dr. R. B. Fitz-Randolph, assistant director of the state hygienic laboratory at Trenton, N. J., "Public Health Conditions as they are in New Jersey."

April 19. Dr. R. B. Fitz-Randolph, assistant director of the state hygienic laboratory at Trenton, N. J., "Public Health Conditions as they should be in New Jersey."

April 20. Dr. V. A. Moore, dean of the New Jersey State Veterinary College, Cornell University, "Tuberculosis in Cattle with Special Reference to Infected Milk."

April 26. Dr. A. C. Abbott, director of the laboratory of hygiene of the University of Pennsylvania, Philadelphia, Pa., "Control of Transmissible Diseases."

May 3. Dr. E. G. Conklin, professor of biology at Princeton University, "Heredity and Democracy."

May 7. Dr. P. H. Mitchell, professor of physiology at Brown University, and summer director of the United States Fisheries Laboratory at Woods Hole, Mass., "Live Problems in Nutrition Research."

May 16. Mr. G. Fuller, engineer and sanitary expert, New York City, "What shall be the Limitation in the Pollution of Raw Waters so that they may be safely purified by modern Water Treatment Plants."

May 17. Mr. G. Fuller, "The Present Status of Sewage Disposal Methods."

SCIENTIFIC RESEARCH AND THE ELECTRICAL WORLD

A DEPARTMENT of Scientific and Industrial Research will be henceforward one of the features of *The Electrical World*. The department is to be conducted by Professor Vladimir Karapetoff, of Cornell University, and has for its object the "Interchange of Ideas, Investigations Contemplated, Research Facilities

Available, and Suggestions for Cooperative Work." The scope of the research section is described in the issue of March 17, as follows:

This section is started without preconceived ideas, but with a sincere desire to serve the interests of electrical research and of investigators. In it will be embraced:

1. Interchange of ideas among investigators in the electrical industry and in pure science on some important problem to be solved.

2. Questions regarding some topic in research to be undertaken.

3. Suggestions and answers to questions from those who are in a position to advise.

4. Brief reports on some electrical research in progress or results obtained.

5. Information regarding facilities available for electrical research in private, federal, technical-school or public service company laboratories.

6. Discussions and tabulations of some important research problems in the various branches of electrical industry and science with the idea of concentrating the attention of the investigators on those problems.

7. Suggestions and arrangements for cooperative research where it is superior to uncorrelated individual efforts.

Short contributions bespeaking the support of electrical research, or that tend to enhance its dignity and show its importance in the cultural standing, prosperity and safety of the country, will also be welcome.

A few experienced, skilled and competent investigators can not of themselves accomplish much, any more than a few generals without an army. A large number of young electrical engineers and physicists must be encouraged and interested in research, because from their ranks future great investigators will arise. Many will become useful assistants in research, still others will at least realize the importance of research and will encourage it when they reach positions of authority. Above all, a circle of sympathetic readers must be created who will follow research, delight in new achievements, and lend moral and material support to faithful workers. Otherwise the section will be like a major league team playing a spirited game before an empty grandstand.

This, then, is a request for cooperation from those who are interested in research, be it practical or theoretical. Let the profession know what you are doing and how you are doing it. Let us all rejoice in your triumphs, and let us lighten your difficulties or disappointments if possible. If the