

tional institutions, and officers of the various scientific academies, professional societies and technical organizations.

Preliminary plans for the tribute to Dr. Thomson provide for an afternoon conference on topics significant to the occasion. These include the historical development of the applications of electricity, the recent experimental trends and the latest theories of electricity and matter. In connection with this meeting, plans are being made for an impressive exhibit of many of Dr. Thomson's inventions and contributions in the electrical field.

The committee in charge of arrangements consists of the following:

Professor Dugald C. Jackson, head of the department of electrical engineering at the institute, *chairman*; Professor Gustav C. Dahl, of the same department, *secretary*; Dr. Charles G. Abbot, secretary of the Smithsonian Institution; Dr. James Rowland Angell, president, Yale University; Dr. William W. Campbell, director, Lick Observatory, and president, the National Academy of Sciences; Harry P. Charlesworth, vice-president of the Bell Telephone Laboratories, Inc., and president of the American Institute of Electrical Engineers; Dr. Karl T. Compton, president, the Massachusetts Institute of Technology; Dr. Harvey Cushing, Moseley professor of surgery, emeritus, Harvard University; Nelson J. Darling, manager, river works, General Electric Com-

pany; Alexander Dow, president, Detroit Edison Company; Dr. Paul D. Foote, director, Research Laboratory of the Gulf Production Pipe Line Companies; Honorable William C. Forbes; Professor Jeremiah D. M. Ford, Harvard University, president, American Academy of Arts and Sciences; Dr. Thomas S. Gates, president, University of Pennsylvania; Dr. George E. Hale, director, Mount Wilson Observatory; Nathan Hayward, president, the American Dredging Company; Dr. Frank B. Jewett, vice-president, the American Telephone and Telegraph Company; Dr. Arthur E. Kennelly, of Harvard University, president, the Union Radio Scientifique Internationale; John C. Lincoln, chairman, board of directors, the Lincoln Electric Company; Dr. Arthur D. Little, president, Arthur D. Little, Inc.; Dr. A. Lawrence Lowell, president, Harvard University; Dr. Roland S. Morris, president, American Philosophical Society; Dr. Calvin W. Rice, secretary, American Society of Mechanical Engineers; E. Wilbur Rice, Jr., honorary chairman of the board, General Electric Company; Andrew W. Robertson, chairman of the board, Westinghouse Electric and Manufacturing Company; Albert L. Rohrer, formerly of the General Electric Company; Clayton H. Sharp, vice-president and technical adviser, Electrical Testing Laboratories, and chairman, U. S. National Committee of the International Electrotechnical Commission; Ambrose Swasey, chairman of the board, Warner and Swasey Company; Gerard Swope, president, the General Electric Company, and Edwin S. Webster, president, Stone and Webster.

SCIENTIFIC NOTES AND NEWS

PRESIDENT HERBERT HOOVER has been elected an honorary member of the British Institution of Civil Engineers.

BRITISH New Year's honors included the title of baron, conferred on Sir Thomas Jeeves Horder, senior physician to St. Bartholomew's Hospital.

A MEETING in memory of John J. Carty, vice-president of the American Telephone and Telegraph Company, who died on December 27, was held at Rollins College on February 9. The speakers were Dr. Frederick P. Keppel, president of the Carnegie Corporation of New York; Thomas A. Watson, who was associated with Alexander Graham Bell in the invention of the telephone, and Dr. David G. Fairchild, of the U. S. Department of Agriculture. Dr. Carty was a trustee of Rollins College.

THE Cameron Prize of the University of Edinburgh has been awarded to Dr. George F. Dick, professor of clinical medicine at Rush Medical College, Chicago, and Dr. Gladys H. Dick, fellow of the John McCormick Institute for Infectious Diseases, in recognition of their work on the etiology and treatment of scarlet fever. The award is made annually "to a person who,

in the course of the five years immediately preceding, has made any highly important and valuable addition to practical therapeutics."

JAMES ORR ELTON, since 1921 manager of the International Smelting Company at Salt Lake City, has been awarded the James Douglas Medal for 1933 of the American Institute of Mining and Metallurgical Engineers. The award, the highest in the metallurgical field, was established in memory of Dr. James Douglas, who was largely responsible for the development of copper metallurgy in Arizona. The medal was conferred on Mr. Elton for his work in the treatment of smelter fume and in the production of electrolytic zinc; for the development of methods for preferential flotation of lead-zinc-silver ores and oxidized lead-silver ores; and for improvements in lead smelting. Presentation of the medal will be made at a meeting of the institute on February 22.

THE council of the British National Institute of Agricultural Botany has awarded the Snell Memorial Medal for 1932 to Dr. Kenneth M. Smith, entomologist of the Potato Virus Research Station of the University of Cambridge. The medal is given to

Dr. Smith in recognition of his valuable research work on the virus diseases of the potato.

THE Stephen Hales Prize of the American Society of Plant Physiologists has been awarded to Dr. Hubert Bradford Vickery, of the Connecticut Agricultural Experiment Station, for his work on vegetable proteins.

THE gold Paul-Ehrlich Medal has been awarded to Dr. Paul Uhlenhuth, professor of hygiene and bacteriology at the University of Freiburg, Baden.

THE Bernhard-Nocht Medal has been awarded to Dr. Hans Ziemann, professor of parasitology at the University of Berlin.

THE Swedish Medical Society has awarded the Gullstrand Gold Medal to Priestley Smith, emeritus professor of ophthalmology at the University of Birmingham, England, for his "ophthalmological researches, especially regarding glaucoma and the permanent growth of the lens."

DR. LOUIS MARTIN, subdirector of the Institut Pasteur and director of the Hôpital Pasteur, Paris, has been nominated Grand Officer of the Legion of Honor.

DR. FRIEDRICH VON MÜLLER, professor of internal medicine at Munich, celebrated on December 30 the fiftieth anniversary of his doctorate.

PROFESSOR EDWARD R. SCHWARZ, of the department of mechanical engineering at the Massachusetts Institute of Technology, has been elected to a fellowship in the British Textile Institute in recognition of his "notable contributions in the field of textile technology and research."

JOHN CLYDE HOSTETTER, director of research and development of the Corning Glass Works, New York, has been elected president of the American Ceramic Society, which opened its thirty-fifth annual convention in Pittsburgh on February 13. Mr. Hostetter succeeds Emerson P. Poste, consulting engineer of Chattanooga, Tennessee. Louis J. Trostel, of the General Refractories Company, Baltimore, has been made vice-president, replacing W. Keith McAfee, of the Universal Sanitary Manufacturing Company, New Castle, Pennsylvania.

CAPTAIN CHARLES M. OMAN has been appointed surgeon-general of the U. S. Navy, succeeding Rear Admiral Charles E. Riggs, whose term expired on January 19.

DR. RALPH HARTLEY WETMORE, assistant professor of botany at Harvard University, has been appointed director of the Botanical Laboratories.

DR. J. B. S. HALDANE has resigned from the Sir William Dunn readership in biochemistry at the Uni-

versity of Cambridge, to accept a chair in the University of London.

DR. NATHANIEL T. KIDDER was elected president of the Massachusetts General Hospital at the annual meeting of the corporation on February 1.

Museum News reports that an informal committee to advise on opportunities for service in building up Canadian museums has been formed by the Carnegie Corporation, following recommendation of Sir Henry Miers and S. F. Markham. The members of the committee are Eric Brown, director of the National Art Gallery, Ottawa; H. O. McCurdy, assistant director of the National Art Gallery; E. L. Judah, director of the Ethnological Museum, McGill University; J. C. Webster, of Shediac, New Brunswick, and Francis Kermode, curator of the Provincial Museum at Victoria.

DR. JAMES ANGUS DOULL, president of the Western Reserve University chapter of Sigma Xi, has announced the election of the following new members from the faculty of the School of Medicine: Dr. Carl H. Lenhart, professor of surgery; Dr. Claude S. Beck, assistant professor of surgery; Dr. Norman C. Wetzel, assistant professor of pediatrics; Dr. Rafael Dominguez, associate in pathology, and Dr. Carrol G. Barber, fellow in anatomy.

DR. HERMA PLANTENGA, specialist in plant pathology at the laboratory of Professor Dr. Johanna Westerdijk, at Baarn, Holland, is at present in the United States as a volunteer worker at the new division of plant pathology of the Rockefeller Institute at Princeton.

PROFESSOR N. I. VAVILOV, president of the Lenin Academy of Agricultural Sciences and director of the Institute of Plant Industry, Leningrad, is visiting the United States on his way from a trip to South America. Professor Vavilov is especially interested in the economic grasses and their relation to the development of civilization.

DR. ELLSWORTH HUNTINGTON, research associate in geography at Yale University, lectured before the Franklin Institute on February 9, on "A Theory of Civilization and Climate."

DR. CHARLES R. STOCKARD, professor of anatomy and director of the Experimental Morphology Farm at Cornell University, began on February 14 a series of lectures at the New School for Social Research, New York City, in which he will discuss "The Modern Analysis of Living Structures and Behaviors." Under this general heading, he will give fifteen weekly lectures.

THE twenty-fourth Kelvin lecture of the Institution of Electrical Engineers will be delivered by Sir Frank

Smith, secretary of the British Department of Scientific and Industrial Research, on April 27. The title of the lecture will be: "The Travel of Wireless Waves."

THE HENRY RUSSEL LECTURESHIP at the University of Michigan for 1933 has been awarded to Professor Walter B. Pillsbury, head of the department of psychology. The lectureship was established ten years ago by the late Henry Russel, who left \$10,000 for the purpose. The income from the fund is divided into two sums, one being devoted to the lectureship and the other to the Henry Russel award. The latter will go to a faculty member, ranking not higher than assistant professor and showing promise of unusual talent.

AN inaugural banquet of the Smith-Reed-Russell Society of the School of Medicine, George Washington University, was held at the University Club on the evening of January 13, at which time guest speakers included Dr. Theobald Smith and Dr. Frederick F. Russell, two of the three investigators in honor of whom the society is named. Other speakers included the president of the university, Dr. Cloyd Heck Marvin, and Colonel Albert E. Truby, who received the key of the society for Walter Reed to transmit to Colonel Walter L. Reed, surviving son.

Nature reports that spring lectures at the Royal Institution are planned as follows: The session of public afternoon lectures at the Royal Institution was opened by Professor J. C. McLennan, who is giving an experimental course on the work on "Low Temperatures and Low Temperature Phenomena" with which he and the University of Toronto have been specially identified. A course on "Recent Advances in Genetics" is to be given by Professor J. B. S. Haldane, who recently returned to England from a visit to the United States. Later courses are by Sir William Bragg, who will review the progress in the past twenty years of the science of crystal analysis by x-rays, and Mr. A. R. Hinks, secretary of the Royal Geographical Society, on "Geography in the Public Service." Mr. Hinks will speak on the new one inch Ordnance Survey map, and the delimitation of national boundaries. Lord Rutherford will give a Saturday course on the "Detection and Production of Swift Particles." The course will be experimental, and as a part of his subject Lord Rutherford will describe the recent progress at the Cavendish Laboratory by Chadwick, Cockcroft and Walton and others. Sir James Jeans will give a course on "Modern Astronomy." The new Fullerian professor of physiology at the Royal Institution, Professor G. Elliot Smith, will give a course on the "Evolution of the Mind."

THE Federal Club, an organization of officials of

the Federal Government and the government of the District of Columbia, having as its purpose the advancement of standards of administration and of personnel and the promotion of cooperation and efficiency in the business of government, appointed Dr. W. W. Stockberger, director of personnel and business administration of the U. S. Department of Agriculture, as member and chairman of its membership committee at a meeting held at the Cosmos Club in Washington on January 18. Other members appointed to this committee are E. C. Crittenden, chief of the electrical division of the Bureau of Standards, and E. C. Babcock, secretary of the United States Civil Service Commission. Albert K. Brown, Bureau of Fisheries, was elected a director, to succeed Commander H. A. Seran, Coast and Geodetic Survey, who has been detailed to duty at sea. Edgar B. Calvert, chief of the forecast division of the Weather Bureau, is now president of the club.

Nature states that the work, extending over the past two years, of various preliminary committees was brought to a conclusion on January 3 when the Institute of British Geographers held its first meeting and elected a council and officers. The initial membership is open to all present members of the staffs of university departments of geography in Britain; in the future, membership will be by election. With one possible exception, all universities, as well as a large number of colleges of university rank, in Great Britain have now departments of geography and there is thus an obvious need for coordinating the teaching and research work of their staffs and for permitting an exchange of views on matters of particular interest in the furtherance of the subject in the universities. The council and officers elected are: *President*, Professor C. B. Fawcett, University College, London; *Honorary Secretary and Treasurer*, Mr. A. A. Miller, Reading; *Honorary Assistant Secretary*, Dr. H. A. Matthews, Birkbeck College, London; *Council*, J. N. L. Baker, Oxford; Dr. R. O. Buchanan, University College, London; Professor H. J. Fleure, Manchester; Professor L. L. Rodwell Jones, London School of Economics; Professor P. M. Roxby, Liverpool, and Dr. S. W. Wooldridge, King's College, London.

THE London *Times* reports that a new scientific expedition to the Antarctic has been undertaken by Captain Riiser Larsen, who left London recently with several friends for the shores of Enderby Land. According to present arrangements, the exploring party will consist of Captain Larsen and two other men, who will join him and his friends in South Africa. From there they will board a tanker belonging to Consul Lars Christensen, and will make the 11-days trip to Enderby Land, which they expect to reach some time in February. There the three ex-

plorers will land with their supplies and 100 dogs, and for a year will make a close study of the coast of the Weddell Sea. Captain Larsen accompanied Amundsen's 1925 Arctic Expedition.

EARLY in January, according to *Museum News*, the Rochester, New York, Museum of Arts and Sciences was voted an additional \$9,000 appropriation by the city council and will remain open. For a time the financial crisis in the city, which was receiving only a limited income from taxable property and had 50,000 welfare cases to care for, threatened to close the museum and Director Arthur C. Parker had tendered his resignation. With the added appropriation the museum is to continue its work; and at the request of the city museum board Mr. Parker has agreed to remain in charge.

THE committee of the American Psychological Association on Precautions in Animal Experimentation, consisting of Drs. C. P. Stone, E. G. Wever and C. J. Warden, *chairman*, desires to call attention to the following bills which have been introduced since January first to limit experimental work on animals: (1) New York Assembly, A. 63, proposing to prohibit any experimental work upon a living dog; (2) New York Assembly, A. 181, proposing to make it a misdemeanor to experiment or operate on a live dog for any purpose other than to heal or cure the animal; (3) Massachusetts Senate, S. 113, proposing to penalize certain experiments and operations on live dogs, and (4) Maine House, H. 217, proposing a fine for the practice of vivisection in schools supported wholly or in part by the state. Dr. Warden writes: "It is hoped that members of the American Psychological Association, residing in these states, will write letters of protest against the passage of these measures to the appropriate legislators. Bills of this

kind are backed by powerful organizations whose efforts to obstruct scientific research must be met by active and determined resistance."

THE printed *Proceedings* of the Land Use Symposium, held at the summer meeting of the American Association for the Advancement of Science at Syracuse University, have just been issued. They contain all the papers presented at the meeting, which was well attended by economists, business men, research workers, foresters, agronomists, geographers and representatives of other earth sciences. Among the subjects treated in the *Proceedings* are the activities of the National Land Use Committee, Land Use and Agriculture, Land Use and Forestry, Land Use and Erosion, Land Use and Transportation, The Relation of Taxation to Land Utilization and Planned Land Use. The speakers included Dr. L. C. Gray, secretary of the National Land Use Planning Committee, Washington, D. C.; Dr. G. F. Warren, head of the Department of Agricultural Economics and Farm Management, Cornell University; Dr. F. P. Weaver, head of the Department of Agricultural Economics, Pennsylvania State College; Dr. Joseph S. Illick, head of the Department of Forest Management, New York State College of Forestry, Syracuse University; Mark Graves, director of the budget of the State of New York; Dr. Jacob G. Lipman, dean and director of the New Jersey Agricultural Experiment Station; Dr. Henry G. Knight, chief of Bureau of Chemistry and Soils, U. S. Department of Agriculture; Dr. Charles L. Raper, dean of the College of Business Administration, Syracuse University; L. R. Schoenmann, in charge of the Michigan Land Economic Survey. The *Proceedings* are arranged in a 60-page bulletin of standard book size, which can be procured from the Department of Forest Management, New York State College of Forestry, Syracuse, N. Y.

DISCUSSION

A NEW MATHEMATICAL FORMULA FOR CHEMICAL ANALYSIS IN A TWO PHASE SYSTEM¹

OWING to the depression, the biochemist may be faced with a reduction in floor-space and budget, and, hence, one piece of apparatus may have to serve for a number of analytical procedures. I have shown² that the Bausch and Lomb micro-colorimeter may be used for the analysis of over 60 substances.

In many analytical procedures, the titration of a substance in water solution in the presence of large

quantities of impurities leads to error which is greater the greater the ratio of the impurities to the "unknown."

In colorimetric analysis, colored impurities may often be ruled out by the use of monochromatic light that transforms the colorimeter into a spectrophotometer. Luminous, rarefied-vapor-tubes giving bright line spectra may be easily obtained, and color-filters used to filter out all bright lines except the one desired.

Impurities may not have worried chemists who were analyzing large samples of the unknown substance. But as the methods are adapted to smaller and smaller quantities of the "unknown" without a proportional reduction in the impurities, side-reactions which were insignificant in the older work become significant to the micro-chemist.

¹ From the University of Minnesota and Tohoku Imperial University.

² McClendon, "A System of Microchemical Analysis, Handbook of Experimental Chemistry." (1st ed., Japanese and English) Kyo-rytsu-sha, Tokyo, 1932.