the inscription "The Solomon and Dora Monness Shapiro Building of the Einstein Institute of Physics," will be unveiled in the presence of Mrs. Dora Monness Shapiro, the widow of Solomon Shapiro, of New York, in whose memory the building was donated.

The late Philip Wattenberg, also of New York, was joint contributor with Mr. and Mrs. Shapiro of the building. It is similar in construction to the Mathematics Building of the Einstein Institute of Mathematics on Mount Scopus, which was Mr. Wattenberg's gift.

SCIENTIFIC NOTES AND NEWS

SIR JAMES HOPWOOD JEANS has been elected president of the British Association for the Advancement of Science in succession to the late Sir William Hardy. Sir James is now visiting the United States.

DEAN DEXTER S. KIMBALL, of the College of Engineering of Cornell University, was guest of honor at a recent dinner of the Engineering Society of the University of Pennsylvania. Dean Kimball delivered the address of the evening on "Old Features of the New Deal." Fifty educational and industrial leaders of Philadelphia attended the banquet.

AT the recent meeting in New York of the American Institute of Mining and Metallurgical Engineers, honorary membership was conferred on Albert Sauveur, Gordon McKay professor of metallurgy at Harvard University.

THE honorary degree of doctor of science will be conferred by the University of Dublin in July on Canon Victor Gregoire, professor of general biology and botany at the University of Louvain, and on Dr. D'Arcy Wentworth Thompson, professor of natural history at St. Andrews University.

SIR FREDERICK GOWLAND HOPKINS, professor of biochemistry at the University of Cambridge, president of the Royal Society; Professor G. H. Hardy, Sadleirian professor of pure mathematics at the University of Cambridge, and Dr. Erwin Schrödinger, formerly professor of theoretical physics at Berlin, now a fellow of Magdalen College, Oxford, have been elected honorary members of the Academy of Science at Leningrad.

OFFICERS of the Geological Society of London were elected at the annual meeting on February 16 as follows: *President,* J. F. N. Green; *Vice-presidents,* Professor P. G. H. Boswell, Professor W. S. Boulton, Sir Thomas H. Holland and Mr. W. Campbell Smith; *Secretaries,* Professor W. T. Gordon and L. Hawkes; *Foreign Secretary,* Sir Arthur Smith Woodward; *Treasurer,* Mr. F. N. Ashcroft.

AWARDS of advanced fellowships for study in Belgium under the auspices of the Commission for Relief in Belgium Educational Foundation, Incorporated, have been made for one year to Dr. Milton S. Plesset, National Research Council Fellow at the Institute for Theoretical Physics at Copenhagen, to study physics, especially quantum-electrodynamics, at the University of Liége, and to Dr. Jerome S. Smiser, instructor in geology at Princeton University, to study paleontology and stratigraphy at the Royal Museum of Natural History in Brussels. Fellowships awarded for a limited period have been granted to Edward G. Misner, professor of farm management at Cornell University, to study agricultural cooperation and credit in Belgium and to Charles B. Read, assistant geologist in the U. S. Geological Survey, to study paleobotany at the University of Liége.

DR. NEVIL MONROE HOPKINS, formerly of the George Washington University, will serve as acting professor of electrical engineering in the College of Engineering at New York University for the remainder of the year.

D. W. CHITTENDEN, assistant professor of animal husbandry and assistant animal husbandman of the University of Missouri, has accepted an appointment beginning on January 1 as chairman of the department of animal husbandry in Montana College.

AT Yale University, Dr. Cornelius B. Osgood has been promoted to be curator of anthropology in the Peabody Museum of Natural History, and Dr. Hugh M. Wilson has been appointed assistant professor of radiology.

DAVID BRUNT, since 1919 superintendent of the British Army Services Division of the Meteorological Office, has been appointed to the university chair of meteorology at the Royal College of Science, University of London.

DR. J. SANCHEZ COVISA, formerly president of the College of Physicians of Madrid, has been appointed dean of the medical faculty of the University of Madrid to succeed the late Dr. Sebastian Recasens Girol.

IT is reported that Dr. Rexford Guy Tugwell, assistant secretary of agriculture, will be placed at the head of a commission to Puerto Rico to study conditions there in an effort to raise the standards of living. The survey will be made in collaboration with Governor Winship.

PAUL G. REDINGTON, chief of the Bureau of Biological Survey for the past seven years and for

twenty-three years with the Forest Service, returned on March 1 to the service. This transfer is brought about at his own request. W. C. Henderson, associate chief, will be acting chief of the Bureau of Biological Survey. Secretary Wallace, in announcing the transfer, expressed his appreciation of Mr. Redington's services with the Biological Survey.

B. Y. MORRISON, for the past six years assistant chief of the Bureau of Plant Industry of the U. S. Department of Agriculture, has been appointed chief of plant introduction. Mr. Morrison succeeds Knowles A. Ryerson, who became chief of the bureau on January 1. Dr. M. A. McCall, in charge of the Division of Cereal Crops and Diseases, in addition has been placed in charge of cotton and other fiber investigations.

DR. HOWARD R. TOLLEY, director of the Giannini Foundation of Agricultural Economics of the University of California, has been granted an extension of his leave of absence to June 30 to enable him to continue as chief economist in the Agricultural Adjustment Administration in the U. S. Department of Agriculture. Leave of absence has also been granted to Dr. M. R. Benedict, professor of agricultural economics and agricultural economist, in order that he may take part in a study of the statistical work of several departments of the Federal Government. Dr. Harry R. Wellman, extension specialist in agricultural economics, has been requested to serve as chief of the specialty crops section of the Agricultural Adjustment Administration.

DON S. ANDERSON, of the department of economics of the College of Agriculture of the University of Wisconsin, has been called to Washington, D. C., where he will assist with the dairy adjustment plans of the Agricultural Adjustment Administration. It is expected that the work will occupy approximately three months.

PROFESSOR R. ADAMS DUTCHER, head of the department of agricultural and biological chemistry of the Pennsylvania State College, sailed for Germany on March 1. For the next six months he expects to devote the major portion of his time to visiting the universities and experiment stations of that country. He is especially interested in making a detailed survey of the vitamin research laboratories in ten other northern and central European countries, in addition to those of Germany. On March 28 he will attend the Technical and Chemical International Congress of Agricultural Industries at Paris. During his trip abroad Professor Dutcher is serving as a collaborator for the Federal Bureau of Chemistry and Soils and as a fellow of the Oberlaender Trust of the Carl Schurz Memorial Foundation.

DR. H. H. LOVE, who is on leave of absence from Cornell University to serve as agricultural adviser to the Ministry of Industries of the Government of China, has been working with some Chinese agriculturists for the organization of a National Agricultural Research Bureau for China. Such a bureau is now established, and a number of investigators are already at work on a number of important agricultural projects. Land has been bought, and a new building for investigational work is already under way. This is the first important step taken by the new National Government to promote the agricultural industry of China. The purpose of the bureau is to develop work along those lines that are of national importance, leaving the agricultural problems of local importance for the provincial governments to handle. Dr. Love is now serving as technical adviser to the bureau and as chief of the Division of Crop Improvement.

PROFESSOR P. W. BRIDGMAN, of Harvard University, was guest speaker at the initiation ceremonies of the Sigma Xi at the University of Pittsburgh, on February 14. His topic was "The Behavior of Material under High Pressures." On the previous day he spoke before the Pittsburgh Physical Society, on "Are Our Conventional Electrical Concepts Adequate for Thermoelectric Phenomena?"

DR. EDWIN B. WILSON, professor of vital statistics, School of Public Health, Harvard University, delivered the principal address in connection with the annual Sigma Xi Day held on February 22 at the University of Rochester. Dr. Wilson's topic was "Factors in Mental Ability." The program also included a science lecture for young people, given by Dr. Sherman C. Bishop, professor of zoology at the University of Rochester, and a series of six lecture-demonstrations of current scientific research by members of the Rochester Chapter.

DR. JAMES FRANCK, Nobel laureate, formerly head of the second Physical Institute, University of Göttingen, lectured on "Catalysis" on March 3, before a joint meeting of the Washington Academy of Sciences and the Philosophical Society of Washington.

PROFESSOR LOUIS KAHLENBERG addressed the Akron Section of the American Chemical Society on February 15 on "The Relationship between Electrical Potentials and Chemical Reactivity." On the following day he spoke to the Columbus Section at the Ohio State University.

THE eighth annual Priestley Lectures at the Pennsylvania State College will be given at 7:30 each evening from March 19 to 23 in the Chemistry Amphitheater. This series deals with the border line between physical chemistry and some other branch of science. Dr. Ross Aiken Gortner, professor of agricultural biochemistry at the University of Minne-

sota, will give the lectures this year. His subject is "The Borderline between Physical Chemistry and Life Processes." He will treat in these lectures "The Colloidal State of Matter"; "Electrical Forces at the Interface," and "Water in the Colloidal State and the Rôle of 'Bound Water' in Living Processes." The Priestley Lectures were inaugurated by the faculty of the college in 1926. In 1931, Phi Lambda Upsilon (honorary chemical fraternity) undertook their financial support.

ARRANGEMENTS have been made for the next annual meeting of the American Association of Physical Anthropologists to be held at the American Museum of Natural History in New York, from May 8 to 10, inclusive. The time of the meeting will be concurrent with that of the American Society of Mammalogists (May 8 to 12). A joint session with that society is planned for the morning of May 10 and will be devoted chiefly to papers on primates.

THE eighty-second annual meeting of the American Pharmaceutical Association and affiliated organizations, during which the American Institute of Pharmacy will be dedicated, will be held at Washington from May 7 to 12. Members of the District of Columbia Pharmaceutical Association will act as hosts. The general committee of arrangements, headed by President Paul Pearson, of the District Association, is completing arrangements for the business and entertainment features of the program.

THE Chicago Chapter of the Rocks and Minerals Association, an organization for citizens of Chicago who take interest in geology and mineralogy, held its initial meeting on February 17, with thirty-four persons present. The group met at the Museum of Science and Industry for a tour of the museum, including the full-sized working coal mine which is being shown there. The excursion was followed by a "get-acquainted" dinner at the Broadview Hotel, at which Dr. D. J. Fisher, of the University of Chicago, spoke informally on "Collecting Rocks and Minerals Around Chicago," and Mr. F. L. Fleener, of the Joliet Township Junior College, spoke on the Wilmington strip mines as a collecting ground for fossil-bearing nodules. Mr. Ben H. Wilson, national director of program building and research of the Rocks and Minerals Association, explained to the group the significance and purpose of the association and made various suggestions for the future activities of the Chicago Chapter, of which G. Frederick Shepherd is chairman.

ACCORDING to *Industrial and Engineering Chemistry,* to mark the twenty-first anniversary of the South African Chemical Institute, there has been issued a pamphlet containing the addresses given on the occasion, the meetings being held in Johannesburg in May, 1933. In addition to an address broadcast by J. A. Wilkinson and remarks by the deputy mayor of Johannesburg and the president of the Transvaal Chamber of Mines, a series of papers was presented on the history of the institute and the relation of chemistry to the community, to industry, to agriculture, to medicine, to fuels and to the coal industry. Another paper discusses chemistry in the extraction of base metals.

The Experiment Station Record reports that the Frasch Chemical Foundation at the University of Missouri has approved an extension for a second five years of the station project on growth and development of domestic animals. The new grant will provide $9,000 per year from this source, and the work will be continued under the immediate direction of Dr. S. Brody and the supervision of a special station committee, consisting of the director and the chairmen of the departments of agricultural chemistry, animal husbandry, dairy husbandry and poultry husbandry.

THE Bernice Pauahi Bishop Museum, Honolulu, T. H., has recently donated to the Yale School of Forestry over 2,500 specimens of wood from the islands of the South Seas. This is the largest single addition ever made to the Yale collections and brings the number of catalogued samples up to nearly 26,600. The object of the gift, according to Professor Samuel J. Record, is to further a comprehensive systematic study of the woods of the entire world which is being sponsored by Yale University in cooperation with the International Association of Wood Anatomists. The Bishop Museum specimens are said to be of exceptional value because nearly all were obtained through expeditions to remote localities in the Pacific, for example, Fiji and Samoa, and Austral, Cook, Hoorn, Lauai, Line, Marquesas, Maui, Phoenix, Rapa, Raratea, Society, Tubuai and Wake Islands.

ACCORDING to a summary given by a correspondent of the London *Times,* changes in the constitution of the British Association of Chemists were made at the sixteenth annual meeting of members recently held in Manchester. Ordinary members of the association contribute compulsorily to an unemployment fund. It is now proposed to establish a new class. The council shall have power at their discretion to elect as fellows eminent persons interested in the objects of the association. In the discussion it was clear that the proposed new class of members would have no power of voting on the disposal of the unemployment fund and their subscriptions would not be applied to it. The name "fellow," however, was felt to be not quite satisfactory, and as there was equal difficulty about calling them "honorary" members, since they would be expected to contribute, the meeting finally passed the

resolution amended so as to leave the exact definition to be supplied by the council later. Another change, also strongly challenged before being adopted, was that giving the council "power at their discretion to elect as associates chemists not of British nationality who would otherwise be qualified for full membership." This was objected to as if it were against the economic interests of British chemists, but the president, Professor E. C. C. Baly, according to the correspondent, made it perfectly clear that the intention was simply to enable that association to be courteous and friendly to the alien chemists who are admitted to England by the Ministry of Labor under special license for limited periods and for particular jobs. The proposed new rule was therefore amended so as to limit such associateship of alien members to the period of their stay. The new rules came into force on December 1.

DISCUSSION

SYMBOLS AND NAMES FOR THE HYDROGEN ISOTOPES

RECENT discussion[1,2] concerning names and symbols for the hydrogen isotopes illustrates a typical difficulty in scientific nomenclature. The problem continually arises of choosing or compromising between conflicting ideals: (1) maximum brevity, simplicity and euphony in important individual names; (2) maximum explicitness, completeness and consistency of characterization of individuals or individual types as members of a class or system; (3) the principle that well-established nomenclature, even if not particularly good, should not be too hastily set aside; but if, for sufficient reasons, it is replaced, the new nomenclature should not contain old names or symbols used with new meanings. In connection with (1), there is a tendency to prefer names, which give a feeling of qualitative individuality, to numbers; while with (2), there is a tendency toward complex symbols, often including numbers.

The use of different names for different isotopes of an element is natural when the isotopes have appreciably distinct individualities. Among radioactive elements, such individual names are very natural from the standpoint of radioactive family relationships, although uncalled for from a purely chemical view-point. The assignment of names to the hydrogen isotopes is based on the expected existence of appreciable differences in chemical behavior, together with the not irrelevant fact that the heavy isotope can be isolated in quantity.[1]

Logically, we might name isotopes like plants and animals. We speak of *Quercus alba* and *Q. rubra;* why not *Hydrogen protium* and *Hydrogen deuterium* as complete systematic names for the hydrogen isotopes? In practise, of course, the complete names would seldom be used, but instead usually just the genus or just the species name. Or one might adopt as standard nomenclature the generic name hydrogen and the individual names hydroprotium and hydrodeuterium, the latter abbreviated ordinarily to the terms protium and deuterium proposed by Urey, Murphy and Brickwedde.[1]

Turning to symbols, we find H^1, H^2, Cl^{35}, Cl^{37}, and so on, in common use. These, however, especially H^2 because the small number two occurs often for another purpose, as in $H^2{}_2O$, tend to be somewhat confusing and hard to read. Moreover, they make extra work in typewriting and typesetting and, especially with the hydrogen isotopes, are liable to confusing misprints, *e.g.*, $H_2{}^2O$, $H_2{}^1$. The form $(H^2)_2O$ is clear but too cumbersome. H^2_2O involves difficulties and expense in typesetting. Most of the troubles just mentioned could be avoided by using H1, H2, Cl35; $H1_2O$, H1H2O, $H2_2O$; $H1_2O16$, H1H2O17; $Cl35_2$; $C_6H1_3H2_3$; and so on. With a little practise, H1, H2 or O16 is recognized as a single symbol, just as are the two letters in Cl.

Whatever practise may be followed for isotopes in general, it seems clear that, at least for hydrogen, new symbols must be adopted. As Professor Urey has pointed out in correspondence, even H1, H2 will very likely not do, because of confusion sometimes arising when these are spoken as parts of complex formulas.[1] Some investigators[3] now use H and D for H^1 and H^2. This practise is open to serious objection in that it provides no means of distinguishing between the genus hydrogen (H) and the species *H. protium* (here also H). Usually, to be sure, there may be no danger of confusion, but it seems likely that in the future we shall wish to speak sometimes of the properties of, for example, H_2O, other times of the (more sharply defined) properties of $H1_2O16$, so that it would be far wiser to introduce a new symbol for protium, leaving H for the genus hydrogen (*cf.* ideal 3).

Unfortunately, we can not use P for protium. Pm might be used, or perhaps M or Z. We could then speak of H_2O, Z_2O, D_2O. The use of Z and D makes maximum concessions to ideal (1), but at the expense of ideal (2), since Z and D look like symbols for

[1] Urey, Murphy and Brickwedde, *Jour. Chem. Physics*, 1, 513, 1933.

[2] R. W. Wood, SCIENCE, 78, 532, 1933; Urey, Brickwedde and Murphy, and F. C. Whitmore, *ibid*, 78, 602–3, 1933; and later discussion in SCIENCE and *Nature*.

[3] *Cf., e.g.*, H. C. Taylor and J. C. Jungers, *Jour. Am. Chem. Soc.*, 55, 5057, 1933.