

resolved to continue and to expand its service to learning. For more than two hundred years the society has kept pace with America's progress. Through all the years to come it pledges its membership to its original ideal and purpose—"promoting useful knowledge."

But at the present time the society is faced with a problem which for solution will require the cooperation of the entire membership. Since Benjamin Franklin gathered about him in 1727 his "ingenious acquaintance into a club for mutual improvement," many and marvelous changes have taken place in this world of ours. As the nation has progressed, hundreds of learned societies have followed in the wake of this first gathering of intellectual leaders.

Because of this growth and of the natural need for a great many special societies, it is becoming more and more necessary to unite the intellectual leaders of to-day in one coordinating effort for mutual understanding and the promotion of useful knowledge.

"Unless there is a period of intellectual stock-taking," said Professor C. Lovatt Evans, of University College, London, before the British Association for the Advancement of Science, "there must inevitably be a loss of perspective and of grasp of great general principles."

The American Philosophical Society is taking stock of the intellectual situation with a view to formulating a future program of service to all branches of learning through its membership. As one of our distinguished members said for us at our bi-centenary celebration in 1927 and as others of us have often emphasized:

"The intertwining of philosophic and humanistic interests in the Philosophical Society helps not merely in deepening our perspective in the field of knowledge. It serves also to make more clear the meaning of development of human interests through time. In a day of natural and proper specialization such an organization serves as stabilizer and a means for helping to make more clear the relation between man and his environment, and the place of the individual in the scheme of human organization.

"The two hundred years of history behind us have seemed perhaps to make more wide the gaps between our various departments in the scheme of knowledge. Before us lies an opportunity for service in picturing through synthesis of these divergent elements a universe of nature and of human life more wonderful than that which we have known and destined to give us ever increasing joy of living."

With our opportunity thus clearly defined, I have appointed a committee on development of the society's activities. This committee has as objectives the intellectual stock-taking necessary to the projection of a program of continuing and expanding service of the society and the final development of that program.

Already the members of the committee, chosen from various parts of the country, have proffered their views for such a program. Within a short time a report will be made.

Upon the devotion of the members depends the society's opportunity for the successful execution of this program.

The members of the committee are:

Francis X. Dercum, *chairman*; Cyrus Adler, Philadelphia; John Ashhurst, Philadelphia; Frank Aydelotte, Swarthmore; James H. Breasted, Chicago; Ernest W. Brown, New Haven; Albert P. Brubaker, Philadelphia; William W. Campbell, Berkeley; Edward Capps, Princeton; Edwin G. Conklin, Princeton; Arthur L. Day, Washington; Henry H. Donaldson, Philadelphia; Joseph Erlanger, St. Louis; Livingston Farrand, Ithaca; John H. Finley, New York; Arthur W. Goodspeed, Philadelphia; Victor G. Heiser, New York; William J. Holland, Pittsburgh; Arthur E. Kennelly, Cambridge; William E. Lingelbach, Philadelphia; Edgar Odell Lovett, Houston; Daniel T. MacDougal, Tucson; Clarence E. McClung, Philadelphia; Walton B. McDaniel, Philadelphia; Lafayette B. Mendel, New Haven; John A. Miller, Swarthmore; Robert A. Millikan, Pasadena; Henry Fairfield Osborn, New York; Raymond Pearl, Baltimore; R. A. F. Penrose, Jr., Philadelphia; William Lyon Phelps, New Haven; Eli Kirk Price, Philadelphia; Henry S. Pritchett, New York; Charles Lee Reese, Wilmington; Leo S. Rowe, Washington; Frank Schlesinger, New Haven; William B. Scott, Princeton; Harlow Shapley, Cambridge; Witmer Stone, Philadelphia; Elihu Thomson, Swampscott; Oswald Veblen, Oxford; Edwin B. Wilson, Boston.

SCIENTIFIC NOTES AND NEWS

HERBERT HOOVER has received the congratulations of a committee representing the American Philosophical Society, of which he has long been a member. The engrossed scroll presented to the President-elect bears the following inscription: "To scientific knowledge and technical skill, to a devotion to humanities you join a wide experience in public affairs at home and abroad and you thus exemplify in your person that happy combination of the natural and moral philosophies which this society has cherished since the day of its founding by Benjamin Franklin. We feel assured that the selection of a member of the society, devoted as you have been to scientific studies and to their application to the furtherance of noble humanitarian projects, will be in the minds of the people of this country a symbol of that intellectual statesmanship so necessary for the right proportion between the ideals for which we live and the material and physical prosperity which, though necessary to every nation, must never become its sole concern." Mr. Hoover is the ninth member of the American Philosophical Society to be elected president of the United States.

At the meeting of the Botanical Society of America in New York City, Professor Margaret C. Ferguson, chairman of the department of botany at Wellesley College, was elected president for 1929.

DR. ALEŠ HRDLIČKA was elected president of the Washington Academy of Sciences at its annual meeting held on January 8.

DR. WILLIAM BOWIE, chief of the division of geodesy of the U. S. Coast and Geodetic Survey, has been elected a corresponding member of the Academy of Sciences of the Institute of France.

DR. WILLIAM H. EYSTER, professor of botany in Bucknell University, has been elected a member of the German Botanical Society.

At a meeting of The Academy of Natural Sciences of Philadelphia held on December 18 the following were elected correspondents: Eugene Louis Bouvier, Philippe Dautzenberg, Benjamin M. Duggar, Edward Murray East, Amadeus William Grabau, Carl E. Hellmayr, Arthur Keith, Albert Mann, F. Ris, Charles Wardell Stiles, Walter F. Swingle, Richard Wettstein v. Westersheim and Arthur Smith Woodward.

THE doctorate of science has been conferred by the University of London on Major Greenwood, professor of epidemiology and vital statistics in the university.

DR. H. D. ARNOLD, director of research of the Bell Telephone Laboratories of New York, has been awarded the John Scott medal by the Franklin Institute of Philadelphia in recognition of his work in developing the three-electrode high-vacuum thermionic tube. In addition to the medal a certificate and a premium of \$1,000 were presented to him.

THE prize of the American Foundrymen's Association has been awarded to H. T. Wensel and W. F. Roeser, respectively, physicist and associate physicist of the section of pyrometry of the Bureau of Standards, for a paper giving certain corrections which must be applied to optical pyrometer readings in determining the temperature of molten cast iron. The prize will be presented at the annual convention of the association, which will take place in Chicago in the spring.

THE American Association of Textile Chemists and Colorists has made an award of \$100, their prize for the best paper presented before the association during the year, to Dr. Carl Z. Draves, of the technical laboratory of the E. I. du Pont de Nemours and Company, for his paper on the use of the spectrophotometer in estimating the strength of dyes.

THE Buchan prize of the Royal Meteorological Society for 1929 has been awarded to Dr. Harold Jeffreys for papers contributed to the *Quarterly Journal* of the society during the years 1924-27 on cyclones, fluid motions produced by differences of temperature

and humidity, dynamics of winds and various other subjects. It was planned to present the medal to Dr. Jeffreys at the annual meeting of the society on January 16.

DR. JAMES F. MCKERNON, retiring president of the New York Post-Graduate Medical School and Hospital, was the guest of honor on January 9 at a dinner at the Hotel Biltmore attended by 500 members and guests. Dr. McKernon has been connected with the Post-Graduate Medical School for thirty years and has now been elected its honorary president. Tribute to Dr. McKernon's service both at the Post-Graduate Medical School and as head of its medical unit in France during the war was paid by Dr. J. T. M. Finney, of the Johns Hopkins University, surgeon-in-chief of the A. E. F.; Dr. Livingston Farrand, president of Cornell University; the Reverend Dr. Karl Reiland, rector of St. George's Episcopal Church, and Dr. Edward H. Hume and Dr. Arthur F. Chase, of the Post-Graduate faculty. Dr. Marshall C. Pease presided.

THE marriage of Dr. James W. McBain, professor of chemistry at Stanford University, and Dr. Mary Evelyn Laing, assistant professor in the same department, took place in the Stanford Memorial Church on January 1.

PROFESSOR A. A. TITSWORTH has retired after forty-two years of service in the mathematical department of Rutgers University.

DR. GEORGE OTIS SMITH, director of the U. S. Geological Survey, has been elected a member of the board of trustees of the University of Chicago.

DR. CHARLES E. RIGGS, medical director in the U. S. Navy, has been nominated for surgeon-general and chief of the bureau of medicine and surgery of the Department of the Navy, in succession to Rear-Admiral E. R. Stitt.

DR. MARSHALL C. BALFOUR has been assigned to the New York City office of the International Health Division of the Rockefeller Foundation to succeed Dr. Charles N. Leach, who will be transferred this month to a post in Europe.

HORACE M. ALBRIGHT, superintendent of Yellowstone National Park and field assistant director of the National Park Service, has been designated as acting director of that service during the illness of Stephen T. Mather, its director.

DR. M. C. MERRILL has been appointed chief of publications in the Office of Information, Department of Agriculture, and Frank D. Smith as assistant chief of publications in charge of operations. Dr. Merrill has been acting chief of publications since last July.

Mr. Smith has been in charge of the printing done for the department.

LOYD V. STEERE, associate agricultural commissioner in the foreign service of the Bureau of Agricultural Economics, who has been stationed in Berlin, Germany, has been designated as agricultural commissioner in charge of the Berlin office of the bureau, effective January 1. Mr. Steere was sent to Berlin in July, 1926, as assistant to George C. Haas, then in charge of that office. When Mr. Haas returned to Washington in July, 1927, Mr. Steere assumed full charge. Coincident with Mr. Steere's promotion, Owen L. Dawson, senior economist of the division of statistical and historical research of the bureau, will go to Germany to act as assistant agricultural commissioner.

PROFESSOR L. N. G. FILON has been appointed for a period of five years director of the observatory of the University of London. C. C. L. Gregory has been appointed "Wilson observer."

DR. JOHN P. KINLOCH, head of the public health department of Aberdeen University, has been appointed chief medical officer in the department of health for Scotland. On January 1 he took over the duties of the Scottish Board of Health.

J. D. BELZILE, formerly assistant superintendent of Demonstration Farms in the Province of Quebec, which position he held for six years, has been appointed assistant to the chief supervisor of illustration stations in the experimental farms branch of the Dominion Department of Agriculture, Ottawa.

DR. H. B. HUNGERFORD, state entomologist and head of the department of entomology at the University of Kansas, has returned from an eight-months' visit to Europe, as collaborator for the Smithsonian Institution, where he went for the purpose of comparing insects in the University of Kansas collection with the type collections in the older museums of Europe.

DR. P. A. M. DIRAC, of St. John's College, Cambridge, England, will be in residence at the University of Wisconsin during April and May of the present year, giving lectures in quantum mechanics in the department of physics.

At the annual meeting of the New York Academy of Medicine on January 3, the retiring president, Dr. Samuel W. Lambert, spoke on "The Academy as an Educational Center," and the incoming president, Dr. John A. Hartwell, on "The Academy, the Profession and the Public."

DR. FREDERICK CHEEVER SHATTUCK, long connected with the Harvard Medical School faculty until he became Jackson emeritus professor of clinical medicine

in 1912, died on January 11 in his eighty-second year. Dr. Shattuck was an overseer of the university from 1913 to 1919.

DR. WILLIAM H. DAVIS, chief of the division of vital statistics of the Bureau of the Census, died on January 6.

PROFESSOR ERICH BECHER, of the University of Munich, died on January 6, at the age of forty-six years. A correspondent writes: "He studied at the University of Bonn, receiving his degree from this institution in 1904. In January 1907 he was appointed privat dozent at the University of Bonn. In 1909 he was called as professor of philosophy to the University of Munich. His activities are expressed in the development of the psychological institute, which now enjoys a world-wide reputation. Dr. Becher attended the International Congress of Philosophy held at Harvard College in September, 1927, contributing two papers at its meetings. Besides being a member of many of the leading societies of Europe he was also a member of the Washington Academy of Sciences."

A MEMORIAL academic building in honor of the late Henry Burchard Fine, of Princeton University, is to be erected on the university campus. For this purpose Thomas D. Jones, of the class of '76, and his niece, Miss Gwethalyn Jones, have given \$500,000. Construction of the new building will be begun this spring. It will be devoted to the departments of mathematics and mathematical physics and will be known as the Henry Burchard Fine Mathematical Hall. The Henry Burchard Fine professorship of mathematics, now held by Professor Oswald Veblen, was endowed by Mr. Jones in 1926.

A JOINT meeting of the Optical Society of America and the American Physical Society will be held in New York at the physical laboratory of Columbia University on Friday and Saturday, February 22 and 23.

THE winter convention of the American Institute of Electrical Engineers will be held in the Engineering Societies Building, New York, January 28 to February 1.

THE eighth annual convention of the American Society of Clinical Pathologists will be held in Portland, Oregon, beginning on July 5.

THE twelfth exposition of Chemical Industries will be held at the Grand Central Palace, New York, from May 6 to 11.

INSTRUCTIONS have been given to a Toronto firm of architects to prepare plans and specifications for research laboratories to be erected in Ottawa. It is

announced that the first buildings will cost \$1,000,000 and these will later be added to, bringing the total cost to \$3,000,000. This expenditure is what Premier King had reference to when he told a delegation from the Trades and Labor Congress that the government's contribution to technical research would exceed by many times what it had been contributing to technical education.

FRANCIS P. GARVAN, head of the Chemical Foundation, has given \$10,000 to the Johns Hopkins University for the enlargement of the laboratory of Dr. Joseph Colt Bloodgood for the study of human cancer, particularly in reference to the use of dyes and stains in its diagnosis in its earlier stages and treatment and in the investigation of such problems as may arise.

MR. AND MRS. GEORGE H. ROOS, San Francisco, have given the University of California \$100,000 in memory of Mrs. Roos' parents, J. J. and Nettie Mack, to be used in the medical school for the study of cancer and surgical diseases of the chest. Only the interest will be used for research. The fund, which will be known as the J. J. and Nettie Mack Memorial Foundation, will be governed by a committee of the medical faculty. The Hooper Foundation will cooperate in this work.

THE National Geographic Society has made a grant of \$10,000 to continue its expedition in cooperation with the Smithsonian Institution at Mt. Brukkaros, South West Africa, for the study of solar radiation. Dr. Abbot has had general supervision of the construction of a 12-inch square stellite plane mirror for the laboratory under Dr. D. T. MacDougal's care at Tucson, Ariz. This, the largest stellite mirror which has ever been made, was figured by Mr. M. E. Kahler, of Georgetown. The advantage over the ordinary silver-on-glass optical mirror is in its freedom from tarnishing. Several stellite mirrors 12 years old in the possession of the Astrophysical Observatory are as bright as ever.

THE Carnegie Foundation has made a grant of \$25,000 to Princeton University for the study of light conditions under which atoms exist. The research, to be carried on by the Princeton department of physics and astronomy, is to supplement that now going on at the Mount Wilson Observatory under the auspices of the Carnegie Foundation.

the late Dr. Thomas F. Smallman, a Brooklyn surgeon. The bequest is effective after the death of the widow, Mrs. Jane U. Smallman, who receives the income during her life. The proposed building is to be known as "The Jane Smallman Wing for the Treatment of the Sick."

DARTMOUTH COLLEGE is named as the ultimate beneficiary of the estate of Mrs. Jeannette I. Cummings, who died on December 12. The bulk of the estate, estimated in excess of \$500,000, is to be turned over to the college on the death of her sister for the erection of a memorial to her husband.

DR. FRANK CLIFFORD WHITMORE, head of the department of chemistry at Northwestern University, has been appointed dean of the school of chemistry and physics at the Pennsylvania State College. Dr. Whitmore succeeds Dr. G. L. Wendt, who has been appointed assistant to the president in charge of research.

DR. JOSEPH TRELOAR WEARN, associate professor of medicine in the Harvard Medical School, associate director of the Thorndike Memorial Laboratory and visiting physician to the Boston City Hospital, has been appointed director of medicine at Lakeside Hospital and head of the department of medicine of the school of medicine of Western Reserve University. Dr. Wearn's appointment will fill the vacancy left in June, 1927, by the death of Dr. Charles Franklin Hoover, who had occupied the chair of medicine since 1909.

DR. MILO HELLMAN, associate in physical anthropology in the American Museum of Natural History and hitherto professor of comparative dental morphology, has been appointed professor of orthodontia and head of the department at the New York University College of Dentistry.

C. B. HUTCHISON has been appointed director of the Giannini Foundation of Agricultural Economics, professor of agriculture at the University of California and associate director of research at the station.

DR. H. S. JACKSON, of Purdue University, has accepted a professorship in mycology and cryptogamic botany at the University of Toronto.

UNIVERSITY AND EDUCATIONAL NOTES

A BEQUEST of \$225,000 for building a new wing to the Yale Medical School is contained in the will of

DISCUSSION AND CORRESPONDENCE

THE MISSING LINK IN STELLAR EVOLUTION

I HAVE read with unusual interest the leading article "Available Energy" by Professor Millikan, in *SCIENCE* of September 28, and wish to add an astronomical