him a world-wide reputation. He is the inventor of the cyclotron that gives to atoms the speed of lightning, enabling them to transmute the chemical elements at a greater rate than was hitherto possible. He is the discoverer of radio-sodium, destined largely to replace the costly radium in many of its uses for the alleviation of human suffering. His reputation would be remarkable for any scholar, but for one in his thirties, it is astonishing. It is also fortunate; for both Dr. Lawrence and the cause of science which he serves may look forward to many years of constantly increasing work and service. This modern alchemist has transformed the elements into one another and has produced forms previously unknown, but with rare self-control has refrained from changing the baser metals into gold.

President Angell:

A brilliant young general in the ranks of physical science, whose dramatic victories are everywhere recognized, your Alma Mater is glad to add to the honors you have already won the degree of Doctor of Science admitting you to all its rights and privileges.

*John Howard Northrop, Sc.D.*

Professor Phelps:

This man, born in Yonkers and with much of his life spent in New York City and in a laboratory in the Rockefeller Institute at Princeton, is paradoxically an outdoor naturalist and sportsman. He earned three degrees at Columbia, and set out in the world with a broad training in botany, zoology and chemistry. Since 1916 he has been in the Rockefeller Institute; but in the appropriate seasons, any one who gets up at dawn will find him outdoors with rod or gun. During the summer months he is in the North Country making important studies of potato culture and its blight, so that he has made a profitable union of work and play, for scientific research and human welfare. In his early days as a traveling fellow he was associated with the great biologist Jacques Loeb. His specialty has been the application of physical and chemical principles to fundamental biological problems. His work has illuminated many fields and he has made significant contributions to knowledge. His discoveries in pure science have also been of service to health. He solved the riddle of the enzyme; invisible ferments that had hitherto been known only by their action. From his investigations have come principles of wide applicability. He has recently shown that the so-called "Bacteriophage principle" is dependent upon a crystalline protein which is increased as the bacterial host is destroyed. These chemical substances simulate living matter in their behavior, and their discovery provides a basis for a broader concept of life itself. We welcome this scholar to-day into the Yale Brotherhood.

President Angell:

It is to devoted scientists like yourself working quietly and without ostentation to discover the fundamental physical and chemical bases of life that men look for advance in the conquest of disease and in the building of wiser patterns of life. In recognition of your distinguished contributions in this field, Yale University confers upon you the degree of Doctor of Science and admits you to all its rights and privileges.

# SCIENTIFIC NOTES AND NEWS

A JOINT meeting of the American Association for the Advancement of Science and associated societies, with the Pacific Division and the Southwestern Division, was held at Denver, Colorado, from June 21 to 26. It was the one hundredth meeting of the association, the twenty-first meeting of the Pacific Division and the seventeenth meeting of the Southwestern Division. An adequate report of the meeting, edited by the permanent secretary, Dr. Forest R. Moulton, will appear in an early issue of SCIENCE.

AT a meeting of the Royal Society held on June 17 the following were elected foreign members: Dr. August Krogh, professor of zoophysiology at the University of Copenhagen; Dr. Otto Meyerhof, director of the Kaiser Wilhelm Institute for Biology at Heidelberg, and Dr. Henry Norris Russell, director of the observatory of Princeton University. The Rt. Hon. the Earl of Athlone was elected a fellow of the society under a special clause in the statutes which provides for the occasional election of "persons who either have rendered conspicuous service to the cause of science or are such that their election would be of signal benefit to the society."

AT the commencement of Harvard University, the degree of doctor of science was conferred on Dr. Walter B. Cannon and on Dr. J. A. Cushman, and the degree of doctor of laws on Dr. J. M. T. Finney. The citations read by President Conant were: Walter Bradford Cannon, doctor of science—George Higginson professor of physiology, Harvard Medical School. "A physiologist whose careful experimentation with living animals is unfolding to generations of future doctors new knowledge of those immutable laws which govern the human body." Joseph Augustine Cushman, doctor of science—of Sharon, Mass., biologist, director of the Cushman Laboratory for Foraminiferal Research, also on the Harvard faculty. "A pioneer biologist whose microscope explores the geologic ages, a guide to men who pierce the earth in search of liquid treasure." John Miller Turpin Finney, doctor of laws—surgeon, of Baltimore, Md. "A surgeon never contented with his skill, a wise statesman among those who yearly work fresh miracles with the knife."

THOSE on whom honorary degrees were conferred by the University of Wisconsin at its commencement on

June 21 included the doctorate of laws on Dr. William O. Hotchkiss, geologist and president of the Rensselaer Polytechnic Institute, and on Dr. David Riesman, professor of the history of medicine at the University of Pennsylvania. The doctorate of science was conferred on Dr. Harry A. Curtis, chief chemical engineer of the Tennessee Valley Authority.

DR. JOSEPH ERLANGER, professor of physiology at Washington University, St. Louis, was awarded the honorary degree of doctor of science at the one hundredth annual commencement exercises of the University of Michigan.

AT its one hundred and sixteenth commencement Colby College conferred the honorary degree of doctor of science upon Dr. Leslie B. Arey, Robert Laughlin Rea professor of anatomy at Northwestern University.

DR. WILLIAM KENDRICK HATT, of Purdue University, was given the honorary degree of doctor of science by the University of New Brunswick on May 14, in recognition of his researches in the field of civil engineering.

HENRY FIELD, curator of physical anthropology at the Field Museum of Natural History, has sailed for England to receive a degree of doctor of science from the University of Oxford, in recognition of the research that he has conducted at the museum, the work he has performed on several expeditions for the institution and the many comprehensive scientific reports that he has written.

THE American Association for the Advancement of Science at its Denver meeting made the first award of the Theobald Smith Prize of $1,000, established by the Eli Lilly Company of Indianapolis. The award was made to Dr. Robley D. Evans, assistant professor of physics at the Massachusetts Institute of Technology, for his method of detecting radium poisoning.

OFFICERS of the American Society of Plant Physiologists for the year 1937–38 have been elected as follows: *President,* Dr. O. F. Curtis, Cornell University; *Vice-president,* Dr. W. F. Loehwing, the State University of Iowa; *Secretary-treasurer,* Dr. F. P. Cullinan, U. S. Department of Agriculture, Beltsville, Md.; *executive committee,* for a three-year term, Dr. R. B. Harvey, of the University of Minnesota; *editorial board,* for a three-year term, Dr. H. R. Kraybill, of Purdue University.

THE following officers of the Harvard Chapter of the Sigma Xi have been elected: *President,* Professor Grinnell Jones, chemistry; *Vice-president,* Professor G. M. Fair, engineering; *Secretary,* Professor F. M. Carpenter, biology; *Treasurer,* Professor B. J. Bok, astronomy. Professor L. C. Graton, of Harvard University, gave on May 18 the annual address on "Controversies Regarding the Origin of Ores."

DR. H. E. BIGELOW, director of the department of chemistry at Mount Allison University in Sackville, N. B., was elected president of the Canadian Institute of Chemistry on June 18 at the annual meeting, which was held at Vancouver. Dr. Bigelow succeeded F. E. Lathe, of the National Research Council at Ottawa.

DR. JAMES ROWLAND ANGELL, retiring president of Yale University, has accepted a full-time position as educational counselor of the National Broadcasting Company.

THE Board of Trustees of Cornell University has conferred on Dr. Livingston Farrand, the retiring president of the university, formerly professor of anthropology at Columbia University, the title of president-emeritus.

RETIREMENTS at the close of the academic year of members of the faculty of the University of Wisconsin include: Dr. Edward Alsworth Ross, professor of sociology; Dean Frederick E. Turneaure, of the College of Engineering; Dr. William S. Marshall, professor of entomology, and Dr. George Van Ingen Brown, of the School of Medicine. These retirements are in accordance with a recent regulation enforcing the retirement of members of the faculty at the age of seventy years.

THE *British Medical Journal* states that Professors Bezançon, Carnot, Claude and Gosset are among the eight French leaders of the medical profession who have been nominated "Professeurs de Classe Exceptionnelle"—a distinction which qualifies them for remaining in office until the age of seventy years.

DR. MAGNUS I. GREGERSEN, professor of physiology of the University of Maryland, has been appointed head of the department of physiology at the School of Medicine of Columbia University. Dr. Walter S. Root, also of the University of Maryland, has been named associate professor of physiology. Dr. Gregersen succeeds Dr. Horatio B. Williams, who resigned as executive director of the department two years ago. Dr. Williams will continue to carry on research and teaching.

DR. FRANK H. LATHROP has been appointed head of the department of entomology at the Maine Agricultural Experiment Station. He succeeds Dr. Edith M. Patch, who retired on June 30 after serving as entomologist of the station since 1904.

DR. RICHARD BRADFIELD, professor of soils at the Ohio State University and associate agronomist of the Experiment Station, has been elected head of the de-

partment of agronomy of Cornell University and professor of soil technology and soil technologist in the Experiment Station. He will succeed Dr. Thomas L. Lyon, who retired at the close of the academic year.

AT Purdue University, Karl D. Wood has been named professor of aeronautical engineering to succeed Professor G. W. Haskins, who has resigned to reenter the aviation industry after being a member of the faculty for eight years. Eugene S. Ault, of the Case School of Applied Science, will succeed the late Professor George M. Bartlett as professor of machine design.

DR. C. L. TURNER, professor of zoology since 1930, has been appointed chairman of the department at Northwestern University. Other recent appointments and promotions are: Dr. Orlando Park, promoted to an associate professorship; Dr. Frank A. Brown, Jr., appointed to an assistant professorship; Dr. C. D. Turner, appointed instructor.

DR. J. HOWARD MCMILLEN, research associate in spectrography and electron optics in the department of anatomy of the Washington University School of Medicine, has resigned to become associate professor of physics, Kansas State Agricultural College, Manhattan.

THE Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following appointments and promotions on the scientific staff to take effect on or after July 1. Promotions: Associate Member to Member, Dr. Max Bergmann; Associate to Associate Member, Dr. Wendell M. Stanley; Assistant to Associate, Dr. Lyman C. Craig, Dr. Lee E. Farr, Dr. Roger M. Herriott, Dr. Alma E. Hiller, Dr. Albert B. Sabin, Dr. Erich Traub. New appointments: Assistants, Dr. Otto K. Behrens, Dr. Lindsay M. Black, Dr. Jaques Bourdillon, Dr. Thomas M. Brown, Dr. Jordi Folch-Pi, Dr. Frank H. Robinson, Jr., Dr. Gerhard Schmidt, Dr. Henry A. Schroeder, Dr. Edwin J. Wellhausen. Resident physician at the Hospital, Dr. Colin M. MacLeod. Fellows, Max A. Lauffer, Jr., Dr. John M. Pearce, Dr. Richard E. Reeves, A. Frank Ross.

DR. B. L. MILLER, head of the department of geology of Lehigh University, has been granted leave for the first semester of 1937–1938. During his absence, Dr. D. M. Fraser will be acting head of the department. Dr. Bradford Willard, of the Pennsylvania Topographic and Geologic Survey, has been granted part-time leave and has been appointed assistant professor of geology during Dr. Miller's absence. Dr. Miller and Dr. Willard are to attend the International Geological Congress in Moscow during the summer.

DR. ALBERT W. C. T. HERRE, curator of ichthyology in the Natural History Museum, Stanford University, has returned from ten months spent in collecting in the Orient. Collections of fishes were made in the Chusan Islands and Chekiang and Kwangtung Provinces, China, in the Philippines, in British North Borneo and Sarawak, Borneo, in Malaya, in Burma and in India.

DR. E. L. DODD, professor of pure mathematics at the University of Texas, has been given leave of absence from September 15 to November 1 to enable him to attend the Congress on the Theory of Probability at Geneva.

ON May 17, Dr. W. H. Stoner, of the Burroughs Wellcome and Company Experimental Research Laboratories, lectured to the staff and students of the School of Medicine of Duke University on "Sulfamilamide Therapy," and on May 31, Dr. Jonas S. Fridenwald, of the Wilmer Ophthalmological Institute, the Johns Hopkins Hospital, lectured on "Interpretation of Retinal Changes."

DR. DETLEV W. BRONK, director of the Johnson Foundation for Research in Medical Physics and director of the Institute of Neurology at the University of Pennsylvania, delivered on June 6 the annual address of the Swarthmore chapter of Phi Beta Kappa on "The Social Significance of Intellectual Leadership."

ACCORDING to the will of the late Charles Lathrop Pack, $50,000 has been left in trust for the Charles Lathrop Pack Forestry Trust; $2,000 to the Society of American Foresters, and $5,000 each to the Institute of International Education and the state of New Jersey for the acquisition and maintenance of forest tree nurseries or planting. During his lifetime Mr. Pack had given large sums for the support of forestry and conservation.

LUCIUS N. LITTAUER, of New York City, has given a seven-story building on the southwest corner of Irving Place and Eighteenth Street to the National Hospital for Speech Disorders. The institution will in future be known as the Lucius N. Littauer Institute for Speech Disorders. The building, formerly occupied by the New York Telephone Company, will be remodeled and equipped by Mr. Littauer and will represent a gift estimated at from $200,000 to $225,000. The amount of the endowment has not been made public.

THE daily papers report that Henry Dazian, of New York, a leading theatrical costumer, has left the greater part of his estate to establish the Dazian Foundation for Medical Research. The object of the foundation is the advancement of medical or allied scientific knowledge and the establishment of fellowships. A self-perpetuating board of five doctors of

medicine and four laymen was designated by Mr. Dazian to conduct the foundation. They are: Dr. Alexis Carrel, of the Rockefeller Institute; Dr. Emanuel Libman, professor of clinical medicine at Columbia University; Dr. Israel Strauss, neurologist, and Dr. Philip Finkle, all of Mt. Sinai Hospital; Dr. Harrison S. Martland, of Newark, N. J., pathologist and medical examiner of Essex County, New Jersey; William W. Cohen, a nephew, and the three executors of the estate, Alfred L. Rose, Harold Williams and Emil Friedlander, of Great Neck, L. I. Twenty-five years after his death, the principal of the foundation's trust fund is to be distributed to hospitals, sanatoria and similar institutions selected by the board.

A GIFT of $6,000 has been made to St. Louis University for the promotion of research in seismology and geophysics. It will be used over a three-year period, under the direction of the Rev. James B. Macelwane, S.J. Two fellowships in geophysics will be made available.

ACCORDING to the *Journal* of the American Medical Association, it is planned to open a branch of the Milan Serotherapy Institute at Addis Ababa in the near future. The construction of the building was recently begun.

THE Medical College of Virginia, Richmond, has under construction its first dormitory for men at a cost of $315,000. This building will house the house staff of the college hospitals, approximately fifty, and the senior medical class, its total capacity being one hundred and forty-seven. The building will be located in the hospital center and will contain in addition to the typical dormitory rooms a cafeteria, private dining rooms, an assembly room seating one hundred and fifty, barber shop and other facilities. The building will be dedicated next spring, probably during the centennial celebration of the college.

# DISCUSSION

## RECOGNITION OF MINERALOGISTS

As of December, 1936, the Mineralogical Society of America had 154 fellows and 387 members according to the report of the secretary. This society is the only one of high professional standing in America which includes crystallographers, mineralogists, mineralographers, petrographers and petrologists (as contrasted to geologists in general), and which is continent-wide. The membership also includes ceramic and cement scientists, as well as representatives of all those numerous industries whose research staffs make use of chemical microscopy, as so ably outlined by the address of the retiring president.[1] The following remarks are based on the most recent membership list[2] and on "American Men of Science" (5th ed., 1933—hereafter referred to as A. M. S.).

Two hundred and two of the fellows and members are listed in A. M. S.; this includes 117 fellows, all of those resident in North America except 17. Of these 202, 26 fellows and 1 member have a star in A. M. S., in which work stars are assigned only to residents of the United States. The 27 with stars received these at ages 25 to 62, average 43 1/3, and in 1937 their ages ranged from 50 to 80, average 62 +.

Of these 27

9 are economic geologists (all but one metalliferous)
6 combine mineralogy and petrology
4 combine one or both of these with other fields
5 are petrologists (or petrographers)
2 include a geophysicist and a botanist
1 is a crystallographer-mineralogist

[1] W. S. Bayley, *Amer. Mineral.*, March, 1937, 147–168.
[2] *Ibid.*, 227–239.

Of these 27, 15 received their stars while with some governmental bureau or the Carnegie Institution (at Washington in all but one case), and therefore were doing no teaching; this includes 2 who received their stars one or four years after leaving the U. S. Geological Survey to accept teaching positions.

If only those 16 of the 27 primarily in mineralogy and petrography are considered (eliminating the nine economic geologists, many of which profession are not members of the M. S. A., and the two miscellaneous), it is found that one half or 8 received their stars while in non-teaching work (or in two of these cases shortly after starting to teach). These 8 non-teachers received their stars at ages 33 to 55, average 44 –, and in 1937 are aged 50 to 74, average 58½. The other 8, the professional-teacher mineralogist-petrologists, received their stars at ages 36 to 50, average 44½, and in 1937 are aged 60 to 80, average 69. Further data regarding these 16 are given in Table 1.

Only two teachers have received stars since 1910.

TABLE I

| Date of star | Teachers | | Non-teachers | | Both | |
|---|---|---|---|---|---|---|
| | Number of stars | Average age* | Number of stars | Average age* | Number of stars | Average age* |
| 1933 ... | 0 | – | 2 | 54 | 2 | 54 |
| 1927 ... | 1 | 50 | 2 | 44 | 3 | 46 |
| 1921 ... | 1 | 47 | 2 | 39 | 3 | 42 |
| 1910 ... | 4 | 42 | 1 | 33 | 5 | 40 |
| 1906 ... | 2 | 46 | 1 | 43 | 3 | 45 |

* Of receiving stars.