marily for the exhibit. Of this grant the Genetics Congress received one half.

It is planned to have an excursion to Niagara Falls during the Congress. The cost of a round trip on a special train is about $3.00 per person. An excursion is also planned during the congress to the New York Agricultural Experiment Station at Geneva (about 50 miles north of Ithaca) where there will be exhibits dealing with fruit genetics and fruit breeding. Meetings of sections, interested in fruit work will be held at Geneva during this excursion.

It is expected that after the congress members from abroad will wish to take short trips in order to gain some impression of the scenery, the colleges, universities, public institutions and agriculture of the parts of the United States which are easily reached from Ithaca. Arrangements for transportation and entertainment for two organized excursions will be made—one through southern New England, including visits to Harvard, Yale and other colleges, Woods Hole, and to farms and agricultural experiment stations; and one to Washington, including stops at other cities and universities *en route*. For those members who wish to take longer trips to the west and south the committee will be glad to provide information and help, but because of the greater time and expense involved, no organized excursions will be planned unless a large number of persons request it.

SCIENTIFIC NOTES AND NEWS

MME. MARIE CURIE received the gold medal and honorary fellowship of the American College of Radiology at a luncheon given in her honor at the third International Congress of Radiology, which opened at the Sorbonne, Paris, on July 26. The presentation was made by Dr. Albert Soiland, of Los Angeles.

DR. CHARLES L. PARSONS, of Washington, D. C., long secretary of the American Chemical Society, has been elected to honorary membership in the Society of Chemical Industry, the insignia of this distinction having been presented by Prince George at the jubilee meeting of the society in London. Chemists of other countries who were made honorary members are: H. W. Matheson, Canada; Georges Patart, France; S. P. L. Sorensen, Denmark; Heinrich Schicht, Czechoslovakia; Fritz Haber, Germany; Mario G. Levi, Italy; Toyokichi Takamatsu, Japan; A. M. Llopis, Spain, and G. Engi, Switzerland.

DR. ARISTIDES AGRAMONTE, of New Orleans, has been elected president of the fourth Pan-American Medical Congress to be held next year in New Orleans. Vice-presidents elected are: Dr. Hugh S. Cumming, Surgeon-General, Washington, D. C.; Dr. Charles Mayo, of Rochester, Minn.; Dr. J. G. W. Greef, of New York; Dr. John M. McReynolds, of Dallas; Dr. L. H. Bauer, of New York; Dr. Charles Snyder, of Miami; Dr. Rafael Silva, of Mexico City; Dr. Nicholas A. Solano, of Panama; Dr. Luis Bazetti, of Venezuela; Dr. Fernando Rensoli, of Cuba; Dr. Carlos Paz Soldan, of Peru; Dr. Victoriano Rodriguez Barahona, of Cuba; Dr. Ulysses Valdez, of Mexico City, and Dr. Horacio Ferrer, of Cuba.

DR. JAMES R. ANGELL, president of Yale University, will receive the degree of D.Litt. from the University of Liverpool in December. The degree of D.Eng. will be conferred on Dr. H. Hele-Shaw, emeritus professor of engineering at the University of Liverpool.

THE Remington Medal of the Philadelphia College of Pharmacy and Science has been awarded to Ernest F. Cook by the New York branch of the American Pharmaceutical Association. The medal is awarded annually to the person "who has done the most for American pharmacy during the preceding year, or during a longer period of outstanding activity and of fruitful achievement." The presentation will be made next fall.

DR. LOUIS J. RETTGER, dean of the science department of the Indiana State Teachers College, has been elected vice-president of the institution. Dr. Rettger has been a member of the faculty for forty years.

MR. JOHN G. BARRY, consulting mining geologist and engineer, has been appointed president of the Texas College of Mines and Metallurgy, El Paso.

MR. ASHER HOBSON, director of the foreign agricultural crop and market information service of the U. S. Department of Agriculture, has been appointed professor of agricultural economics at the University of Wisconsin. He will be in charge of cooperative marketing. Mr. Hobson was for seven years American representative at the International Institute of Agriculture in Rome.

DRS. CECIL ROBERT BROLYER and DANIEL KATZ have been promoted to be assistant professors of psychology at Princeton University. Dr. Henry Eyring, lecturer in chemistry at the University of California, and Dr. Wendell W. Mayer, international research fellow at the University of Munich, have been appointed research associates in chemistry.

THOSE promoted to the rank of professor at the

University of Missouri include Dr. Harry H. Charlton, in anatomy, and Dr. Adrian J. Durant, in veterinary science. The following appointments are also announced: Dr. Edgar D. Baskett, associate professor of psychiatry; Clarence Mitchell Tucker, of the Florida Experiment Station, associate professor of botany and plant pathologist.

DR. GEORGE HERMANN, of the School of Medicine of Tulane University, has accepted the professorship of clinical medicine at the University of Texas.

MR. HUMPHREY JOHN DENHAM, of Balliol College, has been appointed director of the agricultural engineering research institute of the University of Oxford.

DR. THEODORE H. FRISON has been appointed chief of the Illinois State Natural History Survey by the Illinois State Board of Natural Resources and Conservation. Dr. Frison had been acting chief of the survey since the death of Professor Stephen A. Forbes in March, 1930.

DR. H. W. VON LOESECKE, of the Bureau of Chemistry and Soils, has left Washington to take charge of the Citrus By-products Laboratory, now nearing completion at Winter Haven, Florida. Dr. W. W. Skinner, assistant chief of the chemical and technical unit, and Dr. F. C. Blanck, in charge of the food research division of the Bureau of Chemistry and Soils, will have general supervision. They will study methods of preserving orange and grapefruit by-products, and of utilizing orange and grapefruit wastes as stock and poultry feed.

DR. WALTER S. MOODY retired from active engineering work in the transformer departments of the General Electric Company on July 1, after forty-three years of continuous direction of the design, production and application of transformers. Mr. Moody was director of the Allegheny Steel Company and has for over thirty years directed the cooperative efforts of the General Electric Research Laboratories and the Allegheny Steel Company.

DR. LOUISE PEARCE, of the staff of the Rockefeller Institute for Medical Research, has been appointed visiting professor of syphilology at Peiping Union Medical College, Peiping, China, for six months, beginning on October 1.

DR. L. R. JONES, professor of plant pathology at the University of Wisconsin, sailed about August 1, to spend several months in the Orient. He plans to visit Japan, China, the Philippines and Hawaii.

DR. CONSTANCE E. HARTT, who has been assistant professor and co-chairman of the department of botany at Connecticut College during the past year, is now engaged in research on potassium deficiency in sugar cane at the Experiment Station of the Hawaiian Sugar Planters' Association, Honolulu. Dr. Hartt holds the Sarah Berliner Research Fellowship of the American Association of University Women.

DR. VACLAV VOJTECH, of Czechoslovakia, a member of the Byrd Antarctic Expedition, has arranged to accompany Dr. Aleš Hrdlička, of the U. S. National Museum, on a visit to Alaska. Dr. Vojtech will investigate the geographical and geological conditions of the peninsula. Dr. Hrdlička will continue his search for Indian and Eskimo antiquities.

MR. Y. L. KENG, who has been studying the grasses of China at the Grass Herbarium of the U. S. National Museum, under a fellowship from the Rockefeller Foundation, has gone to the New York Botanical Garden to consult the Chinese specimens there. He will also visit the Gray Herbarium of Harvard University, and the Arnold Arboretum. He expects to return to Washington about August 20.

MR. LINCOLN ELLSWORTH, representing the American Geographical Society, and Commander Edward H. Smith, of the U. S. Coast Guard, are accompanying Dr. Hugo Eckener on his Arctic tour in the *Graf Zeppelin,* which left Friedrichshafen on July 24.

IT is announced by the Oxford University Exploration Club that the Hudson Strait expedition, under the leadership of Mr. H. M. Clutterbuck, has left for Canada to explore the island of Akpatok and the surrounding regions. The party will consist of eleven men, including four biologists, a geologist, a surveyor, a physicist and a photographer. The undergraduate organizer and originator of the scheme is Mr. C. J. D'Aeth (Balliol).

AT the invitation of the Mexican Government the United States has named the following official delegates to represent it at the third Pan American Medical Association Congress, which meets in the City of Mexico from July 26 to 31, under the auspices of the Mexican Department of Health: Dr. J. C. Anderson, State Commissioner of Health, Austin, Texas; Passed Assistant Surgeon H. F. Smith, a commissioned medical officer of the Public Health Service, now on duty in the office of the American Consul General in Mexico City; Dr. Irving R. Roth, 45 East 82d Street, New York; Dr. John O. McReynolds, Dallas, Texas; Dr. William Davis Gill, San Antonio, Texas; Dr. W. E. Howard, Dallas, Texas.

THERE assembled on July 25 at Matameck on the north shore of the Gulf of St. Lawrence near Seven Islands a conference on wild life in various aspects. It has been organized by Mr. Copley Amory, of Bos-

ton and Washington, who has a wild life preserve in this locality, and he is bringing to it, largely at his own expense, a body of naturalists from all over the world. Sir George Perley has left for Matameck with a group of scientific men who are in the government's employ at Ottawa. The conference was tendered a luncheon on July 22 by the Province of Quebec when they were welcomed by Hector Laferte, Minister of Colonization, Game and Fisheries.

MR. HENRY O'MALLEY, U. S. Fish Commissioner, arrived at Juneau, Alaska, on July 3, on the fisheries patrolship *Penguin,* accompanied by members of the Senate Committee on Wild Life Conservation, Mr. Paul Reddington, chief of the United States Biological Survey; Mr. Carl Shoemaker, secretary of the Senate Committee on Wild Life Conservation, several Congressmen, and Attorney-General Charles Sisson. The object of their visit is to study game and wild life in the territory, with a view to its conservation. The party will proceed from Juneau to Pribolof Islands, where the seal herd will be inspected, thence back to Bristol Bay, Alaska's largest center for the sockeye salmon, where it will make a survey of the administrative methods of protecting the salmon and the canning industry. The committee also expects to visit Kodiak Island to secure first-hand information on the bear situation. Later it will go to the moose pastures on Kenai Peninsula, and then cruise up Cook Inlet.

SOME information is given in *Nature* in regard to the program of the International Illumination Congress, which is to be held in Great Britain from September 1 to 19. Provision is made for visits to London, Glasgow, Edinburgh, Sheffield, Buxton and Birmingham, following which the sessions of the International Commission on Illumination will be held at Cambridge. An item of outstanding interest in the London program is the proposed trip to the Port of London, returning to the Tower of London and Westminster by river, so that the illuminated buildings on the riverside may be seen. Throughout the visits to the cities named, the technical sessions, at which more than a hundred papers will be presented, will alternate with agreeable trips and social events. During the proceedings at Cambridge a lecture will be given by Sir Arthur Eddington. Membership of the congress is open to any one interested in illumination on payment of a registration fee of £2. Those desiring to take part in the congress should communicate with the honorary general secretary (Colonel C. H. S. Evans, 32 Victoria Street, London, S.W.1).

THE third International Congress of Radiology, under the presidency of Dr. Antoine Beclere, of Paris, opened at the Sorbonne on July 26. The sessions lasted throughout the week. Mme. Curie was honorary president of the congress. Twenty-seven countries were represented. Dr. Albert Soiland, of Los Angeles, was chairman of the American delegation, which numbered forty-five members. A radiological exhibition was held in connection with the congress. Dr. Soiland presented an invitation, asking the congress to hold its next meeting in the United States, but owing to its greater accessibility, Zurich was chosen as the place of meeting of the fourth congress, which will meet in 1934.

THE will of the late Dr. John Osborne Polak, professor of obstetrics and gynecology at the Long Island College Hospital, leaves $350,000 to the hospital, $100,000 for the erection of a science laboratory and $250,000 for a building for private patients for maternity and gynecological cases.

ACCORDING to the *Journal* of the American Medical Association a grant of $100,400 for a three-year period has been set aside by the Commonwealth Fund for a study of the function of the kidney, to be directed by Dr. Alfred N. Richards, professor of pharmacology in the University of Pennsylvania School of Medicine. Dr. Richards has devised methods by which the kidney of the frog can be examined microscopically while it is still functioning in the living body. The program of research includes the continuance and extension of these studies and the establishment of a clinical unit where experimental findings can be correlated with observation of patients suffering from kidney trouble.

DR. FREDERICK L. HOFFMAN, of Wellesley Hills, Mass., has presented to the California Institute of Technology his entire collection of books and data on aeronautics with particular reference to accidents and accident prevention. The collection includes many rare items. Last year Dr. Hoffman presented his entire collection of books and data on the North American Indians to Mrs. Joseph Lindon Smith, chairman of the Welfare Committee, Federation of Women's Clubs. During 1930 also Dr. Hoffman presented many thousands of volumes on foreign countries to the Baker Library, Harvard University.

APPARATUS for taking electric readings involving the electric current and potential as it passes through a given section of the earth's crust, for determining geological structure and as a means of locating ores, minerals, etc., has been invented by Oliver H. Gish, of the department of terrestrial magnetism of the Carnegie Institution, to whom has been granted an American patent. Rights in the patent have been assigned by the inventor to Carnegie Institution.

AN everblooming rose, developed by Henry F. Bosenberg, of New Brunswick, N. J., it was an-

nounced recently, has won the first plant patent granted by the United States Patent Office under the new law providing such protection. The patent was assigned to Louis C. Schubert, proprietor of the Somerset Rose Nursery, of New Brunswick, and was obtained by O. M. Kile, of Washington, acting as special plant agent. It covers "a climbing or trailing rose," the patentable feature of which is its ever-blooming character. The owner of the patent has the exclusive right to reproduce, use or sell his invention or discovery throughout the United States and its territories for seventeen years, or to license others to do so.

AT a recent meeting of the board of trustees of the Ohio State University, the following resolution was approved: "That the interest of the University in the *Ohio Journal of Science* be reaffirmed, and that a more definite plan of cooperation with the Ohio Academy of Science in the publication of the *Ohio Journal of Science* be established, $1,000 from the maintenance fund to be appropriated for the use of the *Ohio Journal of Science,* for the college year 1931–1932."

A FOREST research institute has been made a division of the New York State College of Forestry at Syracuse. The purpose in its establishment is to give the work in forest research now carried on by the college in different sections of the state a definite entity and more effective direction. Research in forestry in New York is authorized under the charter given the college by the legislature of the state. The board of trustees of the college during the past eighteen years has, in carrying out the obligations of the charter, set up special divisions of the college, such as the State Ranger School at Wanakena, the Roosevelt Wild Life Forest Experiment Station and other experiment stations.

AMERICA'S first autogiro has been donated to the Smithsonian Institution by Mr. Harold F. Pitcairn, president of the American Autogiro Company. Mr. James G. Ray, vice-president of the company, landed the machine on the lawn in front of the Arts and Industries Building on July 22, and the machine was accepted by Secretary Abbot in the presence of a group of distinguished guests. It will be exhibited in Power Hall next to an early Wright Biplane.

A COLLECTION of graphic charts and anatomical specimens belonging to the Museum of Hygiene of Dresden has been loaned by the museum to the Life Extension Institute and is on exhibition at the head office in New York. The Dresden museum is devoted to the instruction of the general public in the conservation of health. In 1911 the First International Hygiene Exhibition was held in Dresden, which proved to be so successful that its founders and sponsors cooperated in the establishment of the museum as a permanent institution. It is the gathering place of hundreds of international scientific associations. The health and hygiene sections of the League of Nations meet there regularly. The anatomical specimens included in the loan exhibit to the institute have been prepared by a special process which renders them translucent, making possible complete visualization of the underlying vascular and bony structures.

DR. C. F. KORSTIAN, director of Duke Forest at Duke University, Durham, North Carolina, has been notified by Sven Petrini, Secretary-General of the International Union of Forest Research Organizations, Experimentalfaltet, Sweden, of the election of Duke Forest as a member of the International Union of Forest Research Organizations. In addition to Duke Forest there are six other forestry institutions belonging to the Union in the United States—the Yale School of Forestry; Harvard Forest; School of Forestry and Conservation, University of Michigan; Forest Soil Laboratory, Cornell University; the Forestry Division of the University of California, and New York State College of Forestry, Syracuse, New York. The International Union of Forest Research Organizations originated in 1929 when the International Union of Forest Experiment Stations adopted a new constitution extending its field to include all forest research. At the end of 1930 it had fifty-four ordinary and three associate members in more than twenty nations. Germany has the largest membership embracing eight institutions, the British Empire has six members and other foreign countries from one to three.

THE *Experiment Station Record* states that a gift to the state of New Jersey for administration as a dairy research station has been made of 1,100 acres of crop and pasture land, 270 Guernsey and 55 Holstein cattle, elaborate buildings and equipment. The donor is James Turner, of Montclair, a stockbroker in New York City. Arrangements have been made whereby the equivalent of the taxes on the property will continue to be available to the townships of Wantage and Beemerville in which the property is situated. The estate consists of two farms, one of 700 acres on which $500,000 is said to have been spent for improvements and the other 3 miles distant and containing 400 acres. It is expected that the new station will begin operations immediately. Four projects are contemplated, dealing with the breeding of cattle for milk production, cattle feeding, control of diseases and economic management. The residence on one of the farms provides an elaborate administration headquarters and laboratories, and other equip-

ment will be added from time to time. In the words of *New Jersey Agriculture,* "thanks to Mr. Turner's vision and generosity, New Jersey will now have one of the largest and most complete dairy experiment stations in the world."

IT is reported in *Nature* that the Association of British Zoologists discussed at its general meeting the question of the payment of fees to zoologists for expert advice. It is well known, as Professor E. B. Poulton says in a letter on behalf of the council of the association, that a somewhat unscrupulous public takes for granted the good nature [and affluence!] of zoologists in requesting their professional help without offering payment in return. Whether it be a matter of the identification of a species or the delivering of a popular lecture, both demand the expenditure of time and energy, which the expert could have devoted profitably to his own purposes. The council's proposal is that, in the interests of their science, zoologists should demand fees for the work of identifying specimens and giving lectures. They say that such a demand would enhance the respect felt for the science, just as medical advice tends to be valued according to the size of the fee.

DISCUSSION

REDUCTION OF OXYLUCIFERIN BY ATOMIC HYDROGEN

SOME luminous animals, notably an ostracod crustacean, *Cypridina,* contain a substance, luciferin, which oxidizes to oxyluciferin in aqueous solution containing oxygen. In presence of a second substance, luciferase, luminescence appears. Luciferase acts both as a catalyst, accelerating the oxidation of luciferin, and also supplies molecules which may be excited to emit light by the energy of oxidizing luciferin. Oxyluciferin in water solution can be reduced to luciferin by various hydrogenation procedures. The mechanism has been fully discussed by Harvey.[1]

During attempts to excite luciferase to luminesce by the energy of recombination of hydrogen atoms we have observed that dry oxyluciferin can be reduced to luciferin. The apparatus was a modification of that used by Urey and Lavin.[2] Atomic hydrogen was produced in a high tension discharge tube at low pressure and drawn over the material exposed about 30 cm from the discharge tube. Dry oxyluciferin alone gives no luminescence when luciferase solution is added to it, but dry oxyluciferin first exposed to atomic hydrogen becomes reduced to luciferin, which can then be detected by luminescence on adding an aqueous solution of luciferase. No luminescence appears in the atomic hydrogen treated oxyluciferin on adding water alone but only if luciferase is present also, as is to be expected. This experiment confirms the results obtained by reducing oxyluciferin in water solution and makes it quite certain that the luciferin-oxyluciferin change is a dehydrogenation-hydrogenation reaction.

When dry luciferase and luciferin are exposed to low concentration of atomic hydrogen there may at times be observed a faint bluish glow which breaks into incandescence on raising the atomic hydrogen concentration. Dry egg albumen and dry powdered pill-bugs (*Oniscus*) exhibit a dull orange glow in low concentration of atomic hydrogen which may also pass into undoubted incandescence. The faint glow of *Cypridina* may be a luminescence or a low temperature incandescence since the containing vessel does become warm. Willemite and certain other substances show undoubted luminescence in atomic hydrogen.

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1 *Bull. Nat. Res. Council,* No. 59, p. 50, 1927.
2 *J. Amer. Chem. Soc., 51,* 3286, 1926.

"THE POSSIBLE RÔLE OF MICRO-ORGANISMS IN THE PRECIPITATION OF CALCIUM CARBONATE IN TROPICAL SEAS"

THE statement made by Dr. Werner Bavendamm, in the issue of SCIENCE for May 29, 1931, on the subject quoted above, compels me to make some critical comments. Much as I detest polemics I feel it necessary that those interested in the subject in question have the facts before them.

Dr. Bavendamm discusses at some length the observations in tropical seas with respect to calcium carbonate precipitation, and makes it appear that his findings are in conflict with mine. As a matter of fact, Dr. Bavendamm confirms practically all the results obtained in my own studies as reported elsewhere.[1] For example, (1) Dr. Bavendamm finds a very small bacterial population in the open sea. This confirms my findings and those of others. (2) Dr. Bavendamm shows that the bacterial population of muds like those off the Bahama Banks is relatively small as compared with those of soil populations. This also confirms my findings. (3) Dr. Bavendamm

1 Publication No. 340, Carnegie Institution of Washington; Publication No. 391, Carnegie Institution of Washington, 1929.