

light of this star shows the peculiar phenomenon of fading and recovering. The period of this variation is known to be about six hours. During this period he took a number of photographs, one half hour apart, each exposure being twenty minutes, the remaining ten minutes being employed for making the necessary preparations for the next exposure. He thus obtained a number of exposures of the star on the same sensitive plate, but shifted in position. After developing the plate, the successive images plainly showed a fading and recovering, and although the exact location of the minimum brightness could not, in the nature of things, be absolutely determined, the approximate coincidence of the time of the minimum brightness of the visible and the photographed rays was obvious. These tests were repeated a number of times to eliminate the possibility of error and also to take in a certain range of the ultra-violet rays, and since favorable opportunity for making these tests is not frequent, the investigation extended over a period of two years.

The applicant then reasoned as follows: Assuming that the photographic minimum did not exactly coincide with the observed visual minimum, their difference did certainly not exceed an hour, and since the distance of Algol is no less than forty light years, the difference of the velocities of the ultra-violet, and the visual rays could not exceed one part in 250,000. This close approximation establishes equality to all intents and purposes.

At the stated meeting of the Franklin Institute, held on June 19, 1907, the recommendation of the board of managers that the committee's report be approved and the Boyden prize awarded to Dr. Paul R. Heyl was unanimously adopted, and the author will consequently receive this long-delayed and much-coveted award.

SCIENTIFIC NOTES AND NEWS

THE council of the British Association for the Advancement of Science has nominated Mr. Francis Darwin, F.R.S., foreign secretary to the Royal Society, author of important papers on physiological botany and of the

'Life and Letters of Charles Darwin,' to be president of the meeting next year, when, for the fourth time, the association will assemble in Dublin.

ON the occasion of the celebration of the bicentenary of the birth of Linnæus, the Linnæan gold medal of the Royal Swedish Academy was awarded to Sir Joseph Hooker.

At the annual meeting of the American Academy of Arts and Sciences, on May 8, 1907, it was voted to award the Rumford premium to Mr. Edward Goodrich Acheson for the application of heat in the electric furnace to the industrial production of carborundum, graphite and other new and useful substances.

M. H. LE CHATELIER has been elected a member of the section of chemistry of the Paris Academy of Sciences in the room of the late M. Moissan.

PROFESSOR THEODORE W. RICHARDS, the present holder of the Harvard professorship in the University of Berlin, gave an address upon 'Neuere Untersuchungen über Atomgewichte,' to the German Chemical Society in the Hofmann Haus in Berlin, on the evening of June 1. At the address and at the dinner following there were present among many others: Professors Emil Fischer, Landolt, Nernst, Warburg, Planck, Ladenburg, Graebe, Liebermann, Gabriel, Le Blanc, and Brauner.

A PORTRAIT of President Eliot by Mr. John P. Sargent has been unveiled in the Harvard Union in connection with the commencement exercises of the university. The portrait was a gift to President Eliot on his seventieth birthday, chiefly by the alumni of the class of 1904.

PROFESSOR A. E. VERRILL, who has held the chair of zoology and the curatorship of the zoological department of the Peabody Museum at Yale University since 1864, will retire from active service at the close of the present year.

PROFESSOR GEORGE C. COMSTOCK, director of the Washburn Observatory, University of Wisconsin, was honored with the degree of doctor of laws by the University of Illinois at

its commencement on June 12. A week later the University of Michigan conferred upon him the honorary degree of doctor of science.

AMONG the recipients of the honorary degree of doctor of laws, at the commencement commemorating the fiftieth anniversary of the foundation of Washington University, was Professor William Trelease, who has held the chair of botany in the institution since 1885.

THE Western University of Pennsylvania has conferred its doctorate of laws on Daniel Webster Hering, professor of physics in New York University, and its doctorate of science on Arthur Arton Hamerschlag, director of the Carnegie Technical Schools at Pittsburgh.

MR. JOHN FRITZ, pioneer in the iron and steel industry in the United States, has received the degree of doctor of engineering at the Stevens Institute of Technology.

ON the occasion of the sixty-third annual commencement of the University of Michigan the honorary degree of doctor of laws was conferred upon the Count de Montessus de Ballore, the distinguished French seismologist.

ON the occasion of the celebration of the seventy-fifth anniversary of the foundation of Lafayette College, the addresses were made by Professor J. McKeen Cattell, of Columbia University, Professor W. B. Owen, of the college, and Professor Hugo Münsterberg, of Harvard University. The degree of doctor of letters was conferred on Professor Münsterberg, and the degree of doctor of laws on Professor Cattell. The degree of doctor of laws was also conferred on Dr. E. W. Morley, formerly professor of chemistry at Western Reserve University, and the degree of doctor of science on Dr. Frederick Starr, associate professor of anthropology in the University of Chicago.

BEGINNING on Monday, June 24, Professor Louis Kahlenberg will deliver a course of fifteen lectures on modern chemistry at the University of Washington, Seattle. In addition he will also give two lectures of a popular nature on the subjects, 'The Human Side of Some Great Chemists' and 'The Pure Food Movement.'

DR. FRIDTJOF NANSEN, the president for the current year of the Social and Political Education League, delivered his presidential address, in the botanical theater of University College, Gower Street, on June 26, his subject being 'Science and Ethical Ideas.' Sir Oliver Lodge presided.

IN accordance with the standing agreement between Harvard University and the Cultusministerium of the German government the university has designated as visiting professor at Cambridge, for the year 1907-8, Paul Clemen, Ph.D., professor of the history of art at the University of Bonn, and provincial conservator of the Rhine Province.

CHANCELOE E. B. ANDREWS, of the University of Nebraska, has been given a leave of absence for four months, during which he will travel in Europe. Dean Charles E. Bessey will again be the acting chancellor.

DR. L. O. HOWARD, chief of the Bureau of Entomology of the Department of Agriculture and permanent secretary of the American Association for the Advancement of Science, who has been in Europe to secure parasites to prey on the gypsy and brown-tail moths, has sailed from Liverpool to New York.

PROFESSOR CHARLES SCHUCHERT, of Yale University, curator of the geological collection and head of Peabody Museum, will spend the summer, with two assistants, in an extensive geological excursion. The party will start early in July and will examine, in order, the coast formations and marl beds of New Jersey, the Appalachian Mountain formations in Western Maryland, above Harper's Ferry, and the fossil formations of the Devonian and Silurian Age in Western Tennessee. The last part of the summer will be spent in the Arbuckle Mountains of Oklahoma, tracing the sequence of the geological formations.

DR. ERNST A. BESSEY, pathologist in the U. S. Department of Agriculture, in charge of the Subtropical Laboratory at Miami Florida, has been making an extended tour of inspection through the gulf states, and across Texas, New Mexico and Arizona to California, Nevada, Utah, Colorado, Kansas and Ne-

braska, for the purpose of studying certain plant diseases in the field. He returned to Florida in the latter part of June.

F. C. LINCOLN, lately fellow in geology at Columbia University, has gone to Alaska for the summer in his professional capacity of mining engineer.

MR. CHARLES LOUIS POLLARD, formerly assistant curator of the division of plants in the United States National Museum, and more recently botanical editor for the G. and C. Merriam Company, of Springfield, Mass., has been appointed curator of the Staten Island Association of Arts and Sciences. Pending the removal of the museum of the latter to the quarters assigned to it in the new Richmond borough building the temporary office of the curator is in Room 18 of the Staten Island Academy at New Brighton. Mr. Pollard recently returned from a lecture tour in New England and Canada in aid of the cause of plant protection, the trip being made under the auspices of a grant from the Stokes fund of the New York Botanical Garden.

HENRY G. HANKS, at one time state geologist of California, and author of contributions to geology and chemistry, died at Alameda, Cal., on June 19, aged eighty-one years.

DR. ALEXANDER STEWART HERSCHEL, F.R.S., honorary professor of physics at the Durham College of Science, died on June 18. Professor Herschel died at the Observatory House, Slough, Buckinghamshire, where his father and grandfather made their great discoveries.

DR. L. FISCHER, honorary professor of botany at Bern, has died at the age of seventy-nine years.

THERE will be a civil service examination on July 10 for the position of assistant in soil bacteriology in the Bureau of Plant Industry at a salary of \$1,400, and for the position of laboratory aid in economic botany at a salary of \$600.

THE Japanese government announces an appropriation of \$5,000,000 for the international exposition to be held at Tokyo in 1912.

The money is to be paid in installments from 1908 to 1914.

THE next Esperanto Congress will be held at Cambridge, where the delegates will be the guests of the university.

It is reported from Ottawa, Canada, that the Georgian Bay Canal Commission has practically completed, at a cost of some \$600,000, a thorough survey of the proposed 21-foot waterway from Georgian Bay to Montreal *via* the French River, Nipissing, and the Ottawa River. The engineers of the commission have not compiled a final estimate as to the whole cost of the canal, but from information now available it is stated that the total expenditure required for a continuous and easily navigable waterway, with a minimum depth of 21 feet from Georgian Bay to tide water, will be close to \$105,000,000. It is said that the canal will shorten the distance from Fort William, on Georgian Bay, to Montreal by over 400 miles. It is estimated that with the completion of the canal there will be 500,000 horsepower available along its course—almost as much as is available at Niagara. With so much cheap power available and with its great resources of iron ore and timber the Ottawa Valley is expected to become one of the greatest manufacturing centers of the continent. Referring to the early construction of the canal, Sir Wilfrid Laurier recently said that if he had the money to do so he would begin work immediately.

UNIVERSITY AND EDUCATIONAL NEWS

WE noted last week that the legislature had increased the appropriation of the University of Michigan from one fourth to three eighths of a mill. It may be further added that this will give the university the sum of \$650,000 a year. The additional increase, together with the readjustment of values, which was accomplished last year, added about \$250,000 to the annual income of Michigan.

AT the annual alumni dinner of Vanderbilt University on June 17 Chancellor Kirkland announced a gift of \$100,000 from Mr. W. K.