

PAUL R. HEYL (introduced by G. K. Burgess): *A re-determination of the Newtonian constant of gravitation.*
 EDWARD KASNER: *Differential invariants of irregular elements.*

Evening, at 8:30, in the Central Hall

FRANK B. JEWETT and HERBERT E. IVES: *Some recent advances in the art of distant electrical communication.*

Following this address, to which the members of the scientific societies of Washington are invited, the rooms adjacent to the Central Hall will be open for the inspection of the scientific exhibits.

April 26 at 9:30 A. M.

R. H. CHITTENDEN: *Biographical memoir of William Henry Brewer.* (To be read by title.)

EDWIN H. HALL: *Thermionic emission and the "universal constant" A.*

H. F. BLICHFELDT: *On the minimum values of positive quadratic forms.*

W. H. CREW and E. O. HULBURT (introduced by J. S. Ames): *Pressures in discharge tubes.*

FRANCIS B. SILSBEE (introduced by G. K. Burgess): *Current distribution in supra conductors.*

K. T. COMPTON and C. C. VAN VOORHIS: *Heats of condensation of positive ions and the mechanism of the mercury arc.*

W. A. NOYES: *Magnetic hydrogen atoms and non-magnetic hydrogen molecules.*

W. A. NOYES: *The relation of the octet of electrons to ionization.*

JOHN C. MERRIAM: *Exhibit of research results in the Grand Canyon.*

CHARLES W. GILMORE (introduced by John C. Merriam): *Footprints of unknown vertebrate animals in the Carboniferous and Permian of the Grand Canyon, Arizona.*

DAVID WHITE: *The age of the Hermit shale in the Grand Canyon, Arizona.*

CHESTER STOCK and RALPH W. CHANEY (introduced by John C. Merriam): *Fauna and flora of a new Pleistocene asphalt deposit near Santa Barbara.*

JOHN C. MERRIAM: *Significance of geologic range, or life period of animal species.*

NEIL M. JUDD (introduced by W. H. Holmes): *The architectural evolution of Pueblo Bonito.*

April 26 at 2:00 P. M.

D. F. HEWETT (introduced by David White): *Late Tertiary thrust faults in the Mojave Desert.*

ARTHUR L. DAY: *Boring for natural steam in California.*
 ARTHUR L. DAY: *Recent volcanic activity in Japan.*

DOUGLAS JOHNSON (introduced by David White): *Sea-level surfaces and the problem of coastal subsidence.*

HARRY FIELDING REID: *The fundamentals of isostasy.*

SCIENTIFIC NOTES AND NEWS

DR. J. J. ABEL, professor of pharmacology at the Johns Hopkins University, will be presented with the Willard Gibbs medal at the second annual meeting of

the Mid-West regional division of the American Chemical Society in Chicago on May 27 and 28.

DR. SIMON FLEXNER, director of the Rockefeller Institute for Medical Research, gave a series of three lectures on epidemiology under the Herter Foundation of the University and Bellevue Hospital Medical College, New York, on April 18, 20 and 22.

PROFESSOR JAMES W. JOBLING, of the Columbia University College of Physicians and Surgeons, was elected president of the American Association of Pathologists and Bacteriologists at the recent Rochester meeting.

At the Richmond meeting of the American Chemical Society, Professor Richard Willstätter, until recently head of the department of chemistry at the University of Munich, now lecturing in the United States, was elected an honorary member. The society restored to honorary membership Dr. Wilhelm Ostwald and Dr. Walter Nernst, who had been dropped from the rolls during the war.

SIR FREDERICK GOWLAND HOPKINS, professor of biochemistry at the University of Cambridge, received from the University of Aberdeen, at the graduation ceremonies on March 23, the honorary degree of LL.D.

At the June convocation of the University of Durham, the honorary degree of D.C.L. will be conferred upon Sir James Berry, president of the Royal Society of Medicine and consulting surgeon to the Royal Free Hospital.

DR. CHARLES F. JENKIN, professor of engineering at Oxford University, and Dr. A. C. Seward, professor of botany at the University of Cambridge, will receive honorary degrees from the University of Edinburgh at the graduation ceremony on June 1.

DR. JOHANNES THIENEMANN, director of the bird station at Rositten, has been elected a corresponding member of the American Ornithologists' Union and of the Danzig Society of Natural History.

PROFESSOR WILLIAM THALBITZER, Danish naturalist and Arctic explorer, has been awarded the Loubat prize of the Swedish Academy of Science.

THE council of the Geological Society of London has this year awarded the proceeds of the Daniel-Pidgeon Trust Fund to Mr. William Elgin Swinton, who proposed to undertake the comparison of British Mesozoic reptilia with those from similar deposits on the continent of Europe.

DR. ARTUR HANTZSCH, professor of chemistry at the University of Leipzig, celebrated his seventieth birthday on March 7.

DR. WALLACE W. ATWOOD, president of Clark University, has been presented with a diploma by the Institute of Technology of Breslau, Germany, conferring upon him the rank and rights of honorary senator. The testimonial said the diploma was given because of his distinguished work in development of economic geography and his efforts for the reestablishment of scientific relations between America and Germany.

MRS. CARL AKELEY, of New York, has been awarded the Royal Decoration of Honneur Extraordinaire by King Albert of Belgium for her work in completing the expedition of her late husband, Carl Akeley, into the Belgian Congo to get gorilla specimens for the American Museum of Natural History.

At the meeting of the Alabama Academy of Science held in Birmingham on April 8 and 9 the following officers were elected for the year 1927-28: *President*, John R. Sampey, Howard College, Birmingham; *first vice-president*, John Y. Graham, University of Alabama; *second vice-president*, Harry F. Thomson, Birmingham; *secretary-treasurer*, James L. Brakefield, Howard College, Birmingham. The president appointed Dr. Wright A. Gardner, Alabama Polytechnic Institute, counselor to the American Association for the Advancement of Science.

DR. HOWARD A. EDSON, scientific and administrative head of the office of vegetable and forage diseases of the U. S. Bureau of Plant Industry, has been appointed chief examiner of the United States Civil Service Commission by President Coolidge. He succeeds Herbert A. Filer, who died recently.

DR. WILLIAM MONTGOMERY MCGOVERN, anthropologist and explorer, has been appointed assistant curator of South American ethnology in the Field Museum of Natural History, Chicago.

E. L. CHAPPELL has left the research laboratory of applied chemistry of the Massachusetts Institute of Technology to continue special studies on corrosion of water piping for the National Tube Company in the New York area.

DR. JOSEPH S. ILLICK has been appointed State Forester for Pennsylvania. For the last seven years he has been chief of information and director of research for the forestry department.

PROFESSOR LAURENCE M. GOULD, of the department of geology at the University of Michigan, has been named senior member and director of the George Palmer Putnam Expedition which will visit the Arctic regions this summer. The field work of the expedition will include extensive surveys in conjunc-

tion with a detailed mapping of the chief geographic characteristics of the area north of Baffin Island.

DR. N. L. BRITTON, director-in-chief of the New York Botanical Garden, has returned from a ten weeks' collecting trip in Porto Rico.

MRS. AGNES CHASE, associate botanist in the grass herbarium at the U. S. National Museum, sailed for Europe on March 26. She intends to visit Berlin, Paris, Geneva and Vienna, returning about June 15. The primary object of the trip is to study types of *Paspalum* in connection with a monograph of this grass genus now in preparation.

DR. GILBERT GROSVENOR, president of the National Geographical Society, sailed from New York on April 13, for a five weeks' visit to Spain and Morocco.

DR. HARLOW SHAPLEY, director of the Harvard College Observatory, gave a lecture entitled "Beyond the Milky Way" at Cornell University on March 12.

PROFESSOR WALDEMAR LINDGREN gave four lectures on mineral deposits, with especial reference to those of magmatic affiliations, at Queen's University on March 8, 9 and 10, under the auspices of the Willet G. Miller fund.

ON April 9, Professor J. H. Priestley, of the department of botany, University of Leeds, England, delivered an address to the Royal Canadian Institute on the subject "Light and the Growth of the Plant."

SIR JOHN RUSSELL, director of the Rothamsted Experiment Station, England, will lecture at the Wisconsin Agricultural Experiment Station in May.

DR. FRANCIS CUYLER VAN DYCK, emeritus professor of physics at Rutgers University, died on April 11, aged eighty-two years.

DR. DAVID HOUGH DOLLEY, professor of pathology in the school of medicine at St. Louis University, has died at the age of forty-eight years.

DR. JULIUS S. HORTVET, for twenty-seven years chief chemist of the Minnesota State Dairy and Food Department, has died, aged sixty-three years.

THE death is announced of Dr. D. MacEwan, emeritus professor of surgery in University College, University of Dundee.

ARTHUR BERNARD DEACON, a recent graduate in anthropology from the University of Cambridge, died on March 12 at Malecule, in the Hebrides, where he had gone on an anthropological expedition. Mr. Deacon was twenty-four years old.

PROFESSOR HERMANN WICHELHAUS, formerly head of the department of technology at the University of Berlin, has died, at the age of eighty-five years.

DR. GEORGE OSSIAN SARS, retired professor of zoology at the University of Oslo, well known for his work on oceanic zoology, died on April 10, at the age of ninety years.

THE American Electrochemical Society is to celebrate its silver jubilee at the coming spring meeting, to be held at the Hotel Benjamin Franklin, Philadelphia, on April 28, 29 and 30. Professor Edgar F. Smith, of the University of Pennsylvania, will preside at the session commemorating the founding of the society. Most of the charter members now living expect to attend the meeting. Interesting papers have been received describing the progress made in the past twenty-five years in the electric furnace, aluminum, cyanamid, chlorine and other industries. There will also be a review of the general progress in the entire field of electrochemistry. An outstanding feature of one of the meetings will be the address by Peter Debye, of the University of Zurich, on "The Dielectric Constant of Electrolyte Solutions." Professor Hugh S. Taylor, of Princeton University, will preside at this session.

THE Illinois State Academy of Science will hold its twentieth annual meeting on April 29 and 30 at Joliet, Illinois. The preliminary program contains a list of more than sixty papers to be presented before the various sections of the academy.

A JOINT meeting of the Wisconsin Academy of Sciences, Arts and Letters, the Wisconsin Archeological Society and the Midwest Museums Conference was held at the University of Wisconsin on April 7, 8 and 9. At the close of the meeting the following were elected to serve as officers of the Wisconsin Academy for a term of three years: *President*, Samuel A. Barrett; *vice-president* for sciences, Storrs B. Barrett; *vice-president* for arts, Arnold Dresden; *vice-president* for letters, E. K. J. Voss; *secretary-treasurer*, Chancey Juday.

THE *Journal* of the American Medical Association reports that the fourth International Military, Medical and Pharmaceutical Congress will be held at Warsaw, Poland, in May. About 3,000 delegates representing forty countries will participate, but the United States will not be represented officially because of the failure of Congress to pass the second deficiency appropriation bill; it will be represented unofficially by representatives of the U. S. Public Health Service who may be in the proximity of Warsaw at the time of the congress. A sanitary-hygienic exhibit will be held in connection with the congress, which will consist of sections on (1) military field sanitary equipment; (2) scientific hospital equipment; (3) sanitary equipment of dwellings; (4)

chemical and pharmaceutic material; (5) physicians' and dentists' office equipment, and (6) veterinary equipment. Details may be obtained from the American commercial attaché, Aleja Ujazdowska 36, Warsaw, Poland.

THE Royal Photographic Society of Great Britain is holding its seventy-second annual exhibition in September and October of this year. This is said to be the most representative exhibition of photographic work in the world, and the section sent by American scientific men heretofore has sufficiently demonstrated the place held by this country in applied photography. It is hoped that the scientific section will be well represented in 1927, and, in order to enable this to be done, with as little difficulty as possible, A. J. Newton, of the Eastman Kodak Company, Rochester, N. Y., has arranged to collect and forward American work intended for the scientific section. This work should consist of prints showing the use of photography for scientific purposes and its application to spectroscopy, astronomy, radiography, biology, etc. Photographs should be received not later than June 11.

THE Massachusetts Institute of Technology announces ten research fellowships of \$1,000 each for the year 1927-28, open to graduate students who desire to undertake the investigation of fundamental problems in the field of automotive engineering. Applicants for these fellowships must present evidence, not only of high scholastic standing, but also ability to carry on research. Further information regarding these fellowships may be obtained from Professor H. M. Goodwin, dean of graduate students, Massachusetts Institute of Technology, Cambridge.

IN cooperation with the Pittsburgh Experiment Station of the United States Bureau of Mines, eight research fellowships in mining and metallurgy are offered by the Carnegie Institute of Technology for the coming year. The fellowships are open to graduates of colleges, universities and technical schools who are properly qualified to undertake research investigations. Each fellowship carries a stipend of \$750. The purpose is the solution of problems which are of special importance to the mining, metallurgical and allied industries. Several of the fellowships will be financed by industrial groups or corporations.

SECRETARY JARDINE has reappointed as members of the Northeastern Forest Research Council, for a period of four years, Professor R. S. Hosmer, of Cornell University, and Dr. J. C. Kendall, of the New Hampshire Agricultural Experiment Station. He has also appointed S. H. Thomson, president of the Federal Land Bank, of Springfield, Mass., in place of C. H. Keith, of the New England Box Company, and

Blaine S. Viles, state forest commissioner of Maine, in place of F. H. Colby, of the Kennebec Valley Protective Association. The place left vacant by the resignation of H. G. Philbrook, of the Vermont Timberland Owners' Association, has not yet been filled. This council was created to encourage and coordinate research in forestry by all appropriate agencies in the Northeast, including the Northeastern Forest Experiment Station, which functions as a part of the Forest Service.

ACCORDING to information given out by the health section of the League of Nations and reported by the Berlin correspondent of the *Journal* of the American Medical Association, four Japanese medical men will be sent next year to Europe for a stay of nine months. Their specialties are prophylaxis of infectious diseases, the science of nutrition, diseases of the reproductive organs and insurance legislation. Four medical men will likewise be sent from Europe to Japan for nine months, and will be admitted to the Imperial Japanese Institute for Infectious Diseases, the Kitasato Institute and the Hygienic Institute and the Institute for the Science of Nutrition, at the University of Tokyo.

THE American Society of Mechanical Engineers has accepted custody of \$17,500 given by the Lincoln Electric Company of Cleveland, to be awarded to those contributing the best three papers disclosing new information that will tend to advance the art of arc welding. For the best paper \$10,000 will be awarded; second prize is \$5,000 and third prize \$2,500. The purpose of the competition is to encourage improvements in the art of arc welding, the pointing out of new and wider applications of the process or indicating advantages and economies to be gained by its use.

DR. CHAS. N. GOULD, director of the Oklahoma Geological Survey, announces that Governor Henry S. Johnston has signed the bill appropriating funds for the work of the survey during the coming biennial. The amount provided is \$45,000 per year. Plans are being consummated to put several parties in the field during the coming summer and to issue reports on the work accomplished. These plans contemplate studies of the Simpson formation of the Arbuckle Mountains, which contains the "Wilcox" oil sand, by Charles E. Decker; a study on the zinc fields of Ottawa County by Samuel Wiedman; studies of the Cretaceous of Western Oklahoma by Fred M. Bullard; studies of the Woodford-Sycamore-Caney beds of Mississippian and Pennsylvanian age in the Arbuckle and Ouachita Mountains by C. L. Cooper; a study of the asphalt of the state carried on in cooperation with the experiment station of the U. S.

Bureau of Mines at Bartlesville; and a study of road materials in cooperation with the State Highway Commission. During the past two years reports aggregating over three million pages have been issued by the Oklahoma Geological Survey.

A PROCLAMATION by President Coolidge enlarging the boundaries of the Superior natural forest in Minnesota to include approximately 386,600 acres, which are ultimately to be added to that reserve, has been made public by the forest service of the U. S. Department of Agriculture. The executive order brings the total area held by the government in the Superior reserve for restocking with native timber, in accordance with the forestry services lakes states reforestation program, to 1,186,761 acres. The Minnesota national forest, another project, includes 190,000 acres, and the Tawas national forest, in the northern part of the lower peninsular of Michigan, comprises 126,762 acres.

DR. WILLIAM SCHAUS, specialist in Lepidoptera in the U. S. Bureau of Entomology, recently donated to the National Museum a valuable collection of 10,000 specimens of moths; most of them from Bolivia, which were purchased by him from a collector of that country.

AN entomological survey of the Pacific, financed by private funds, is being organized in Honolulu. On the directing committee are Dr. C. Montague Cooke, *chairman*, Charles R. Hemenway, Dr. Arthur L. Dean and Charles S. Judd.

THE John Borden-Field Museum expedition to the Arctic will sail from San Francisco on April 23, in the *Northern Light*, a vessel specially constructed for Mr. Borden a few months ago. Several members of the party will be taken aboard at Victoria, British Columbia, from whence the vessel will proceed northward through the inside passage between the islands and the mainland, to the extreme western end of the Alaskan peninsula. The latter part of July the expedition will enter the Arctic Ocean, where it will remain for about two months.

THE University of Rochester is making plans for a teaching museum of natural history to be included in its new plant on Oak Hill. The new museum is planned to cover geology and biology, and will consist of two floors, each about eighty feet square. Construction of the exhibits has begun. One of the wall models now completed depicts Allen's Creek flowing through a glen about five miles east of Rochester. A second model will show Irondequoit Bay and preliminary studies are under way for a third model to show the evolution of the horse.

DINOSAUR HALL, said to contain the finest collection of prehistoric reptilian remains in the world, was opened formally on March 9 at the American Museum of Natural History. The hall is on the fourth floor of the new southeast wing of the museum, built with a \$1,500,000 appropriation made by the city during Mayor Hylan's administration.

FIVE hundred specimens of mammals, reptiles, frogs, birds, fishes and insects have been received by the Field Museum from the Field Museum-Conover-Everard expedition to Central Africa, according to an announcement by D. C. Davies, director of the museum. The expedition was financed jointly by H. B. Conover, associate in ornithology at the museum, and Robert T. Everard, Detroit sportsman. They were accompanied by John T. Zimmer, assistant curator of birds at the museum. Leaving Chicago last April the party spent approximately eight months collecting in Central Africa.

AN outdoor museum, which will display under natural conditions examples of every tree, shrub and herb found growing in the Harriman State Park, New York, and a menagerie, showing in natural environments all the animals native to the Hudson Highlands region, will be developed at Bear Mountain in the park. Announcement to this effect was made on February 21 by the commissioners of the Palisades Interstate Park, which will carry out the plan in co-operation with Henry Fairfield Osborn, president of the American Museum of Natural History. The museum will be built with funds granted by the Laura Spelman Rockefeller Memorial at the request of the committee on outdoor education of the American Association of Museums, of which Chauncey J. Hamlin, of Buffalo, is chairman. The cost of the building will be about \$7,500.

DURING the past two years the Oklahoma Geological Survey, under the direction of Chas. N. Gould, has held a series of field conferences in Oklahoma and adjacent states, for the purpose of studying and correlating the different geological formations of the region. While these conferences are held primarily for geologists, the interested public is welcome. More than 200 geologists have participated in these various conferences. Two other conferences are scheduled for the coming months. On March 28 and 29, following the annual meeting of the American Association of Petroleum Geologists at Tulsa, there will be a conference in the Arbuckle Mountains and the Ardmore Basin. Among the points of interest to be visited will be the porphyry monadnock known as East Timbered Hills, Turner Falls, Price's Falls, the asphalt mines, White Mound, Burning Mountain, Caddo Anticline and Criner Hills. Later in the season, probably in

May, it is planned to hold a field conference in the Panhandle of Oklahoma, studying conditions near the Ramsey well in Cimarron County, together with the volcanic rock on Black Mesa and the various Cretaceous exposures in that area.

THE cancer commission of Harvard University and the Collis P. Huntington Memorial Hospital have received contributions amounting to \$34,619 for the cancer fund.

UNIVERSITY AND EDUCATIONAL NOTES

ILLINOIS WOMAN'S COLLEGE, Jacksonville, Illinois, is to have a new science hall which will cost about \$200,000. It will be a three-story brick and stone building of the Georgian type of architecture and will contain laboratories and classrooms for the departments of chemistry, physics and biology. It will be ready for occupancy next fall.

WORK is to start about June 1 on the new \$300,000 science building which Milwaukee-Downer College will build to house the departments of zoology, botany, physics, geology, geography and domestic science.

THE construction of a new three-story \$600,000 building for the Philadelphia College of Pharmacy and Science will be undertaken at once. The board of trustees of the college has decided to reduce the number of freshman students for the next session to 250, in the interests of better education.

THE Neurological Institute of New York City has received a gift of \$200,000 from Mr. William Bingham, of New York and Cleveland. The gift is to be used to build and equip one floor in the new building of the institute to be constructed in connection with the new Columbia-Presbyterian medical center, and is given as a memorial to Dr. J. G. Gehring, neurologist, of Bethel, Me.

CHANCELLOR TRYGGER, of Upsala University, has announced that the institution will celebrate its 450th anniversary from September 15 to 17. University representatives in all parts of Europe will be invited to attend. Upsala University was founded in 1477 by Jakob Ulfson.

DR. KIRTLEY F. MATHER, associate professor of physiography at Harvard University, has been promoted to be professor of geology.

RUTGERS UNIVERSITY has promoted Dr. Leon A. Hausman, from assistant professor of zoology to associate professor; Dr. Clyde M. Huber, from instructor to assistant professor of mathematics, and Dr. Darrell B. Lucas, from instructor to assistant professor of agricultural engineering. George W. Musgrave, professor of agronomy, has resigned.