

catalyze the reaction. Professors N. F. Hall and T. O. Jones, of the University of Wisconsin, will present the results of a redetermination of the ratio of light to heavy hydrogen in water. Professor Malcolm Dole, of Northwestern University, will read a paper on the relative atomic weights of oxygen in water and in air, and will discuss the effect of his results on the chemical standard of atomic weights.

A sensitive balance for measuring the density of carbon dioxide, with special reference to the isotopic ratio, will be described by Professor Farrington Daniels, of the University of Wisconsin. Professor Urey will take up the theoretical and experimental methods which have been used to investigate the equilibrium properties of reactions in which hydrogen and deuterium compounds take part.

#### THE SEVENTIETH ANNIVERSARY OF ENGINEERING AT LAFAYETTE COLLEGE

LAFAYETTE COLLEGE celebrated the seventieth anniversary of the founding of engineering courses on March 20, at which time many of the leading engineers in America attended the ceremonies.

The honorary degree of doctor of science was given to Charles Franklin Kettering, president, General Motors Research Corporation; G. S. Rice, chief mining engineer of the U. S. Bureau of Mines, and Professor Almon H. Fuller, head of the civil engineering department of Iowa State College.

Mr. Kettering was the principal speaker of the morning convocation. The topic of his address was "What's Ahead in Engineering?" Professor William S. Hall, professor emeritus of mathematics, outlined "Seventy Years of Engineering at Lafayette." The

convocation in Colton Memorial Chapel was followed by an invitation luncheon at Brainerd Hall.

Dr. Morland King presided over the afternoon conference held in Pardee Hall. The general topic for discussion was "The Place of the Engineer in the Modern World." The speakers were: Professor Almon H. Fuller, whose topic was "The College Training of the Engineer"; Robert I. Rees, assistant vice-president, the American Telephone and Telegraph Company, "The Professional Training and Recognition of the Engineer"; and President William E. Wickenden, of the Case School of Applied Science, outlined "The Place of the Engineer in Modern Society."

The fact that Lafayette was the site of the first successful canning in hermetically sealed containers, accomplished by Harrison W. Crosby, was observed when Edwin J. Cameron, of the National Cannery Association Research laboratories, outlined the development of the industry since Crosby's invention.

Williard Chevalier, vice-president of McGraw-Hill Publishing Company, speaking on the subject of "An Engineer takes a look at Modern Trends" was the last speaker of the day at a subscription dinner at the Hotel Easton. Dr. William Mather Lewis was toastmaster.

Preceding the principal program on Thursday, March 19, at a meeting of the John Markle Mining Society in the new Markle Hall building, members of the faculty unveiled portraits of Rossiter W. Raymond and Thomas M. Brown, formerly professors in the Lafayette engineering department. Throughout the course of celebration there was on display at the Alumni Memorial Gymnasium an industrial exhibition including working models, illustrations of manufacturing processes, scientific instruments, experiments and translux projections of engineering operations.

## SCIENTIFIC NOTES AND NEWS

THE seventy-third annual meeting of the National Academy of Sciences will be held in Washington, D. C., on April 27, 28 and 29.

THE annual general meeting of the American Philosophical Society will be held on April 23, 24 and 25, beginning at 2 p. m., on Thursday, April 23. The R. A. F. Penrose, Jr., memorial lecture will be given on Friday evening by Dr. Dixon Ryan Peck, president of Union College, who will speak on "The American Tradition in a New Day."

THE executive committee of the American Association for the Advancement of Science will meet at Lancaster, Pa., on Sunday, April 19. On the preceding evening members of the committee will be entertained by the Lancaster Branch, now having about one

thousand members, established last year by the council of the association at the Pittsburgh meeting. Business to be brought before the executive committee should be sent to the office of the permanent secretary in the Smithsonian Institution Building, Washington, D. C.

THE Hubbard Gold Medal of the National Geographic Society will be presented to Lincoln Ellsworth by President Roosevelt on April 15, probably at the White House. The award was made in recognition of the exploratory flights in the neighborhood of both Poles and particularly for the 2,200-mile flight last November over unexplored territory in Antarctica.

DR. MAXIMILIAN EHRENSTEIN, a member of the department of physiology at the Medical School of the University of Virginia, formerly a member of the fac-

ulty of pharmaceutical chemistry at the University of Berlin, has been awarded one of the prizes of the van't Hoff Fund by the Royal Academy of Sciences at Amsterdam, in recognition of his work on the alkaloïds of tobacco and the catalytic dehydrogenation of cyclic bases.

THE Greek Academy of Sciences, Arts and Letters has awarded its silver medal for distinguished service to Dr. Marshall C. Balfour in recognition of research in the field of malaria control in the Peloponnesus and in the Macedonian towns of Drama and Cavalla. Dr. Balfour is the representative in Greece of the International Health Department of the Rockefeller Foundation.

THE Archduke Josef von Hapsburg, nephew of the late Emperor Franz Josef, has been elected president of the Hungarian Academy of Science.

JOHN HAMMOND, physiologist to the Animal Nutrition Institute, Cambridge University School of Agriculture, has been elected to a non-stipendiary fellowship at Downing College, University of Cambridge. He has made original contributions to animal physiology, his special interest lying in the problems of heredity and reproduction.

AT the recent annual meeting of the Association of American State Geologists in Washington, D. C., the officers elected were: George C. Branner, State Geologist of Arkansas, *president*; Arthur Bevan, State Geologist of Virginia, *secretary*, and Raymond C. Moore, State Geologist of Kansas, *third member of the executive committee*.

OFFICERS of the Harvey Society, New York City, for 1936-37 have been elected as follows: Eugene L. Opie, *president*; Philip E. Smith, *vice-president*; Thomas M. Rivers, *treasurer* (re-elected); McKeen Cattell, *secretary*; Martin H. Dawson, James B. Murphy, George B. Wallace, *members of the council*.

DR. J. ADAIR LYON, professor of physics at Newcomb College, Tulane University, has been elected president of the Astronomical Society of New Orleans. Vice-presidents elected are Charles M. Rogers and F. M. Langbehn.

OFFICERS of the Southeastern Society of Physicists, which met on March 13 and 14 at the Georgia School of Technology, were elected for 1936-1937 as follows: *President*, Dr. D. S. Elliott, Tulane University; *Vice-president*, Dr. W. L. Kennon, University of Mississippi; *Secretary*, Dr. Francis G. Slack, Vanderbilt University; *Treasurer*, Dr. W. S. Nelms, Emory University. Twelve papers on the teaching of physics and thirty-six on research problems were presented. Two invited papers were on "Molecular Structure and Chemical Binding," by Professor Hertha Sponer, of

Duke University, and "Interaction Between Alpha Particles," by Dr. John A. Wheeler. At this meeting the name of the organization was changed from the Southeastern Association to the Southeastern Society of Physicists.

DR. ROY R. GRINKER, head of the division of psychiatry at the University of Chicago, has resigned to become chairman of the department of neuropsychiatry at Michael Reese Hospital. The directors of the hospital plan to provide for the development of clinical and laboratory facilities for research in neuropsychiatry.

PROFESSOR F. C. STEWART, for thirty-seven years head of the division of botany at the New York State Agricultural Experiment Station at Geneva, N. Y., and since 1919 professor of plant pathology at Cornell University, will retire on July 1.

DR. HARALD G. O. HOLCK, at present on the staff of the department of physiology at the University of Chicago, has been elected associate professor of pharmacology in the College of Pharmacy of the University of Nebraska. Dr. Holck will begin his work at Nebraska on September 1.

DR. A. GRANT FLEMING has been appointed dean of the faculty of medicine of McGill University, to succeed Dr. Charles F. Martin, who retires on August 31, having reached the age of sixty-five years. Dr. J. C. Simpson, secretary of the faculty of medicine and chairman of the committee on physical education, a member of the University Senate, will fill the newly established position of associate dean.

*Nature* states that Sir Robert Robertson, who has retired from the post of government chemist, and John Smith, formerly director of animal health in Northern Rhodesia, and since 1933 a member of the Colonial Advisory Council of Agriculture and Animal Health, have been appointed members of the British Agricultural Research Council.

RAYMOND D. GARVER, formerly forester in charge of selective logging and related utilization investigations at the U. S. Forest Products Laboratory, Madison, Wis., has been promoted to be director of the Forest Survey for the United States, with headquarters in Washington. This is an economic study of forest resources and requirements to form a basis for sound forest and land-use planning and management.

DR. ALVIN R. LAMB, formerly of the U. S. Public Health Service and the Leprosy Investigation Station, Honolulu, has become research associate at the Experiment Station of the Hawaiian Sugar Planters' Association, Honolulu.

DR. HARRY R. DESILVA has resigned as professor of psychology in charge of the psychological labora-

tory at the Massachusetts State College to join the staff of the Bureau for Street Traffic Research of Harvard University. He will conduct research on the constructive aspects of controlling the motor car driver.

DR. GLENN FRANK, president of the University of Wisconsin, will be the speaker at the annual dinner of the Wisconsin Academy of Arts, Sciences and Letters, to be held on April 17, during the sixty-sixth annual meeting of the academy at the university.

DR. LYMAN J. BRIGGS, director of the National Bureau of Standards, lectured before the Franklin Institute, Philadelphia, on March 26, on "Some Problems of the National Bureau of Standards."

DR. N. P. SHERWOOD, professor of bacteriology at the University of Kansas, delivered a Sigma Xi lecture at the University of Missouri on March 24. His subject was "Recent Studies in the Field of Hypersensitiveness."

DR. COLIN G. FINK, head of the department of electrochemistry at Columbia University, addressed the University of Cincinnati Chapter of Sigma Xi on March 20, on "Chemistry and Art."

DR. CECILIA PAYNE CAPUSCHKIN, of the Harvard College Observatory, delivered the spring Sigma Xi lecture at the Massachusetts State College on "Seeking New Stars at the World's Observatories."

DR. L. E. KIRK, Dominion agrostologist, Ottawa, Canada, delivered from March 10 to 13 the seventh series of the annual lectures given in recognition of the plant breeding achievements of Frank Azor Spragg, plant breeder at the Michigan Agricultural Experiment Station from 1906 to 1924.

PROFESSOR J. H. MATHEWS, director of the course in chemistry at the University of Wisconsin, recently completed a two weeks' lecture trip in which he addressed nine local sections of the American Chemical Society. Lectures were given at Ann Arbor, East Lansing and Detroit, Michigan, Troy, N. Y. (under joint auspices of Sigma Xi and the local section of the American Chemical Society), Providence, Boston, Baltimore, Penns Grove, N. J., and Wilmington, Del. The subject of the lectures was "The Use of Scientific Methods in the Identification of the Criminal."

THE seventh annual meeting of the American Association of Physical Anthropologists will be held at the Institute of Human Relations of Yale University on April 30 and May 1 and 2.

THE annual meeting of the Society for the Promotion of Engineering Education will be held at the University of Wisconsin from June 23 to 26. Members of the local committee in charge include Professor Frederick E. Turneure, dean of the college, and Professors F. M. Dawson and Ben G. Elliott.

THE Section on Geology and Geography of the American Association for the Advancement of Science will hold meetings in Rochester, N. Y., on Wednesday and Thursday, June 17 and 18. Papers dealing with problems of New York state geology, including correlation with Pennsylvania strata, will be presented at the Wednesday and Thursday morning sessions. Field trips are being arranged for Wednesday and Thursday afternoons. A special feature of this meeting will be recognition of the one hundredth anniversary of the New York State Geological Survey. Dr. Rudolf Ruedemann and C. A. Hartnagel will represent the State Museum and will deliver short talks at a special luncheon on Wednesday. Among those who will present papers are: Wilmot Bradley, G. H. Chadwick, Nelson C. Dale, Alfred Hawkins, Marshall Kay, John T. Sanford, Frank M. Swartz, Bradford Willard, as well as other members of the staff of Syracuse University and of Cornell University. Titles and abstracts of additional papers, proposed for presentation, should be submitted to Dr. J. Edward Hoffmeister, University of Rochester, not later than May 9. Dr. Kirtley F. Mather is secretary of Section E.

THE New York Geographical Association will hold its second annual meeting at Syracuse University on May 2. The program will cover the morning, afternoon and evening of Saturday. There will be a series of papers, a field trip and the banquet. The program will deal with geographic principles and methods, New York State and the place of geography in the secondary school system. Two visiting geographers will be guests of the association, Professor Griffith Taylor, the newly elected head of the department of geography at the University of Toronto, and Professor Stanley Dodge, of the University of Michigan. George B. Cressey is chairman of the association and Melvina Svec is secretary.

THE third Congress of Comparative Pathology will take place in Athens, Greece, from April 15 to 18, under the presidency of Professor Bensis of Athens. The general secretary is Dr. Codounis, of Athens. In the Section of Human Medicine, five subjects will be discussed: (1) echinococcoses, (2) nephroses and amyloses, (3) leishmaniasis, (4) spirochetoses and (5) avitaminoses. In the section of plant pathology the representatives will discuss immunity in plants.

UNDER the auspices of the Society of Glass Technology, the second International Congress on Glass will be held in London and Sheffield from July 2 to 11. Further information can be obtained from Professor W. E. S. Turner, The Society of Glass Technology, Darnall Road, Sheffield, 9.

THE Rockefeller Foundation has provided a research fellowship at the British Institute of Medical Psychology, London, as from March 1, 1936. It is for

research into the relation between the emotional and organic factors in certain physical disorders.

THE Drexel Institute of Art, Science and Industry, Philadelphia, will change its name to Drexel Institute of Technology, subject to the approval of the State Department of Public Instruction.

THE new research laboratories of the British Institution of Automobile Engineers on the Great West Road at Brentford were opened on March 18 by Lord Rutherford, chairman of the Advisory Council of the Department of Scientific and Industrial Research.

It is proposed to establish an Institute of Experimental Psychology at the University of Oxford and if this is approved to accept from an anonymous donor a gift of £10,000 as a contribution towards its foundation. The name to be submitted to the congregation as the first director will be that of Dr. William Brown until he ceases to be Wilde reader in mental philosophy.

It is reported in the London *Times* that a donor, who wishes to remain anonymous, is placing funds at the disposal of the University of Birmingham for an investigation, by Professor W. N. Haworth, head of the department of chemistry, into the possibility of producing an improved form of insulin. Professor Haworth has consented to be responsible for this investigation, on condition that he is assured of adequate cooperation in certain directions.

THE London Office of Works has presented to the Zoological Society a strip of land near Broad Walk, Regent's Park, and the society proposes to use it for the building of a Children's Zoo, complete with a restaurant of its own.

THE U. S. Civil Service Commission announces open

competitive examinations for the positions of senior agricultural engineer, at \$4,600 a year; agricultural engineer, at \$3,800 a year; associate agricultural engineer, at \$3,200 a year; assistant agricultural engineer, at \$2,600 a year. Vacancies in these positions in Washington, D. C., and in the field, and in positions requiring similar qualifications will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion. The salaries named above are subject to a deduction of 3½ per cent. toward a retirement annuity.

*Industrial and Engineering Chemistry* reports that the tenth anniversary of the establishment of the Division of Organic and Fibrous Materials of the National Bureau of Standards was celebrated on the evening of March 5 by an open house in the Industrial Building of the bureau. Warren E. Emley, who has been chief of the division from the beginning, acted as host to the director of the bureau, Dr. Lyman J. Briggs, and the bureau's staff, as well as to a considerable number of invited guests representing the Department of Commerce and scientific and technical bureaus and organizations in Washington. The members of the staff, which numbers 66, 14 of whom have been with the division since it was started in 1926, helped to give an idea of the wide variety of work carried on. Among the interesting exhibits were the experimental paper mill in operation; the machines for testing the durability of tires, shoes and hosiery; and the equipment for determining the best conditions for the preservation of important records. The newest section is studying transparent organic plastics for use as windows in airplanes, and had an exhibit showing how the resistance of these materials to abrasion and weathering is studied.

## DISCUSSION

### TRANSGRESSIONS IN THE ATLANTIC OCEAN<sup>1</sup>

THE term "transgression" was first introduced into oceanographical literature by Le Danois.<sup>2</sup> He defines a transgression as a periodic movement, of variable amplitude, of Atlantic waters of tropical origin, bringing a momentary encroachment of these waters upon the waters of polar origin and especially upon the continental waters.

The theory of the causes of these transgressions and their periodicity is seemingly interlinked with the theory of "internal waves," as developed by Petterson.<sup>3</sup>

<sup>1</sup> Published with the permission of the Biological Board of Canada.

<sup>2</sup> Ed. Le Danois, *Revue des Travaux de l'Office des Pêches Maritimes* 7: 4, 370-462, 1934.

This theory, based on an analysis of astronomical forces, deals with the vertical component of the tidal force, which component has been considered as of negligible interest heretofore. Consequently, the theoretical treatment has not been readily accepted. Nevertheless, the observational data of Petterson, Le Danois and others (*loc. cit.*) offer a mass of evidence in support of their theoretical considerations.

The subject of transgressions, aside from its fundamental importance, promises to be a most important development in oceanographical research, particularly from the standpoint of the fisheries. From the fundamental point of view, the establishing of a cyclic phenomenon in our ocean waters soon leads to its

<sup>3</sup> Otto Petterson, *Geografiska Annaler*, 12: 261-322, 1930.