

ods Employed in Mississippi Valley Archeology" with special reference to past work in Illinois. The Academy of Science maintains separate sections in agriculture, anthropology, botany, economics, geography, geology, medicine and public health, physics and chemistry, psychology and education, and zoology, all meetings being open to the public. A banquet was held on Friday evening at the Shoreland Hotel, after which Dr. Cole delivered the annual public address of the retiring president on "The Coming of Man." On Saturday morning an inspection was made of the new Oriental Museum at the University of Chicago, and also of the Field Museum, the Adler Planetarium and the Shedd Aquarium group in Grant Park.

#### GEOLOGICAL SESSIONS AT THE SUMMER MEETING OF THE AMERICAN ASSOCIATION

SECTION E will hold sessions during the summer meeting of the association at Syracuse, New York, between Tuesday, June 21, and Friday, June 24. Arrangements for the sessions are being made by Dr. George B. Cressey, Syracuse University, local representative for Section E. On Tuesday there will be a joint session with Section M, consisting of a sym-

posium on aerial photography and aerial mapping. Section E will also participate in the symposium dealing with land use, which is being arranged by the general committee for the Syracuse meeting. The Wednesday morning session will be devoted to papers on local physiography, including glaciation. In the afternoon a field trip will be taken to points of physiographic interest. On Thursday morning, in addition to general papers, there will be a number of reports on stratigraphy related to the classic New York section. In the afternoon a field trip will be arranged especially for stratigraphers. Friday, June 24, will be devoted to an all-day field trip in the Mohawk Valley and the Adirondacks.

Those who desire to present papers should send titles to the secretary promptly. Titles must be accompanied by abstracts of about 250 words, giving the substance of the paper, and the author should indicate whether he will use lantern slides, charts or other illustrative material. All titles and abstracts must be in the hands of the secretary not later than May 24, if they are to appear on the program.

KIRTLEY F. MATHER,  
*Secretary, Section E,  
Harvard University*

## SCIENTIFIC NOTES AND NEWS

THE Theodore William Richards Gold Medal was presented to Dr. Arthur Amos Noyes, director of the Gates Chemical Laboratory of the California Institute of Technology, at a meeting of the Northeastern Section of the American Chemical Society in Boston on May 4. The program included a survey of the work of Professor Noyes by Professor Arthur B. Lamb, of Harvard University, president-elect of the American Chemical Society. Professor Lyman C. Newell, of Boston University, gave the history of the medal. William P. Ryan made the presentation and after accepting the medal Professor Noyes spoke on "Education for Chemical Research."

PROFESSOR MICHAEL I. PUPIN, of Columbia University, was recently tendered a testimonial dinner by friends at the Faculty Club, in honor of his having been made an honorary member last summer of the Royal Institution of London. Professor Pupin spoke on "Faraday, the Prophet in Science."

PROFESSOR E. W. BROWN, Stirling professor of mathematics at Yale University, has been made the first incumbent of the professorship of mathematics recently established in honor of Josiah Willard Gibbs.

DR. HELEN DEAN KING, assistant professor in the Wistar Institute of Anatomy and Biology of the Uni-

versity of Pennsylvania, and Dr. Annie J. Cannon, astronomer of Harvard Observatory, have been given jointly the \$2,000 Ellen Richards Research Prize awarded annually by the Association to Aid Scientific Research by Women.

At the annual meeting of the Boston Society of Natural History on May 4, the Walker prize was awarded to Thomas C. Brown, of Fitchburg, Massachusetts, for a paper on the "Glacial Geology of the Nashua Valley," while the second prize was awarded to Kenneth K. Landes, of the department of geology of the University of Kansas, for a paper on "Classification and Distribution of Pegmatites." The following officers of the society were reelected: Charles H. Taylor, *president*; Nathaniel T. Kidder, Glover M. Allen and William M. Wheeler, *vice-presidents*; Clinton V. McCoy, *secretary*; Augustus P. Loring, Jr., *treasurer*; Thomas Barbour, William L. W. Field, Frederic H. Kennard and John C. Phillips, *trustees*. John A. Blanchard and Ralph Hornblower are newly elected as trustees.

PARRY H. MOON, assistant professor of electrical engineering at the Massachusetts Institute of Technology, has been awarded the prize for the best paper presented during the year by the American Institute of Electrical Engineers, northeastern district. The

paper is entitled "Theory of Thermal Breakdown of Solid Dielectrics."

SIR ALDO CASTELLANI, of the London School of Tropical Medicine, is among four recipients of the Mussolini Prize of 50,000 lire (about \$2,500) for special distinction in the past year.

*Nature* writes: "It is fitting that the autumn number (No. 3; 1931) of *Copeia*, a journal of cold-blooded vertebrates published by the American Society of Ichthyologists and Herpetologists, should have appeared as a special tribute to Leonhard Stejneger and his work. For Stejneger is to American cold-blooded vertebrates what G. A. Boulenger is on this side of the Atlantic. Endowed with great personal charm and a willingness to share his profound knowledge, to which the writer of this note has more than once been indebted, Stejneger is a man in whom great diversity of interests and talents has been combined. As Thomas Barbour in a tribute to his friend says, 'Being an antiquarian, a classicist, a rarely accomplished linguist, and a naturalist in the widest sense, he possessed a foundation on which with good health and great industry he has built a mighty structure of rarely excellent work.' The anniversary number, with its many papers on reptiles, amphibians, and fishes, is a fitting monument to this native of Bergen and graduate of the University of Christiania, who since 1882 has been associated with the Smithsonian Institution and since 1911 has been its head curator of biology."

THE following new appointments have been made to the teaching staff of the George Washington University School of Medicine, Washington, D. C.: Errett Cyril Albritton, M.D., professor of physiology and executive officer of the department; Vincent du Vigneaud, Ph.D., professor of biochemistry and executive officer of the department; Leland W. Parr, Ph.D., associate professor of bacteriology; Roscoe Roy Spencer, M.D., associate professor of hygiene and preventive medicine; Chester E. Leese, Ph.D., assistant professor of physiology; John H. Hanks, Ph.D., assistant professor of bacteriology; Elizabeth Verder, Ph.D., assistant professor of bacteriology; George Brewer, M.D., instructor in physiology; Alden F. Roe, Sc.D., instructor in bacteriology; Phoebe J. Crittenden, Ph.D., instructor in pharmacology, and Lane H. Allen, M.S., instructor in anatomy.

DR. CHARLES EDWIN FRILEY has been elected dean of the division of industrial science of the Iowa State College to succeed the late S. W. Beyer. Dr. Friley goes to Iowa from the Texas State College, at which institution he occupied the position of dean of the College of Arts and Sciences.

FRANK H. MOSER has accepted a position as research chemist with the National Aniline and Chemical Company, Buffalo, New York.

DR. KURT KOFFKA, director of the Smith College research laboratory in experimental and educational psychology, has accepted an invitation from the State Institute of Psychology at Moscow to join a Russian scientific expedition to study isolated peoples in remote parts of the country. For the first time a foreigner is included in the personnel of one of the institute's expeditions. Dr. Koffka will lecture at Moscow and at Charkov on his experiments at Smith College.

ACCORDING to the *Journal* of the Washington Academy of Sciences, E. P. Killip, associate curator of plants, U. S. National Museum, who left Washington early in February for study in European herbaria, reports satisfactory results at Berlin. After a month at the Museum d'Histoire Naturelle, Paris, Mr. Killip left for several weeks' work at the Royal Botanic Gardens, Kew, and the British Museum (Natural History), returning to Washington early in May.

J. LELAND MYER, fellow of the Engineering Foundation, who is investigating pure iron for arc welding under Professor Gilbert E. Doan at Lehigh University, has transferred his work to the new laboratory of Professor Gustav Hertz, at Charlottenburg, Germany.

DR. J. BARTELS, who, as a research associate of the Carnegie Institution of Washington, has been engaged on the theoretical interpretation of the accumulated observational data at the Department of Terrestrial Magnetism in Washington, D. C., having completed his year's leave of absence from Germany, has returned to his position in the Forstliche Hochschule in Eberswalde.

A NEW search for Colonel P. H. Fawcett, the English explorer, his son, Jack, and his companion, Raleigh Rimell, reported as lost in the jungle in 1925 while seeking the cradle of Brazilian civilization and now thought by some to be alive, will be undertaken by a British expedition leaving England in June. The expedition, which also will explore Rio das Mortes in the heart of Brazil, will be led by Robert Churchward, who explored the Araguaya River in 1931, and Captain John G. Holman, who was born in Brazil and has spent the greater part of his life as a hunter and engineer in the interior.

PROFESSOR GILBERT AMES BLISS, of the University of Chicago, gave an address on "The Calculus of Variations and Quantum Theory" before the Mathematics Club of George Washington University on April 22.

DR. A. F. BLAKESLEE, of the department of genetics of the Carnegie Institution of Washington, lectured on the inheritance of taste and smell in man, at Goucher College on April 28.

DR. F. M. BECKETT, president of the Union Carbide and Carbon Research Laboratories, gave the last Aldred Lecture of the year at the Massachusetts Institute of Technology on May 6. He spoke on the "Development of the Ferro-alloy Industry."

DR. A. POLICARD, Lyons, France, will deliver the eighth Harvey Society Lecture at the New York Academy of Medicine, on Thursday, May 19. His subject will be "Histochemistry: Present State and Future."

AMONG the Friday evening discourses of the Royal Institution, which were resumed on April 22 and continue until June 3, are the following: April 22, Professor J. B. S. Haldane, "Hereditary Transmission of Acquired Characters"; April 29, Professor H. Hartridge, "The Rival Theories of Hearing"; May 20, Professor Henry E. Armstrong, "Faraday at the Sign of the Hexagon," and "Coal Color and Constitution," and May 27, Sir Walter Fletcher, "New Conceptions of Medical Research."

THE District of Columbia Chapter of Sigma Xi is the first non-institutional chapter of the organization to be granted the privilege of electing members. Under the new provision of the national constitution, Dr. Charles Greeley Abbot, secretary of the Smithsonian Institution; Dr. William Alanson White, superintendent of the Government Hospital for the Insane, and Dr. Roy Smith Bassler, curator of geology at the National Museum, were presented with the insignia of the society at the annual meeting on April 26. They responded with brief addresses on their fields of investigation.

At its recent meeting in Philadelphia the American Society for Experimental Pathology elected the following officers for the coming year: *President*, Dr. Peyton Rous; *Vice-president*, Dr. Carl V. Weller; *Secretary-treasurer*, Dr. C. Phillip Miller, Jr.; *Councilor*, Dr. S. Burt Wolbach; *Councilor*, Dr. Oskar Klotz.

At the twenty-sixth annual meeting of the American Society of Biological Chemists, held at the University of Pennsylvania, from April 28 to 30, the following officers were elected: *President*, Harold C. Bradley, University of Wisconsin; *Vice-president*, W. Mansfield Clark, the Johns Hopkins University; *Secretary*, Howard B. Lewis, University of Michigan; *Treasurer*, Cyrus H. Fiske, Harvard Medical School; *Councilors*, Paul E. Howe, U. S. Department of Agriculture; William C. Rose, University of Illinois, and D. Wright Wilson, University of Pennsylvania.

At the recent annual meeting of the Electrochemical Society, the following officers were elected: *President*, R. A. Witherspoon, of the Shawinigan Chemicals Ltd., Montreal; *Vice-presidents*, Duncan MacRae, E. M. Baker and Sterling Temple; *Managers*, Acheson Smith, O. P. Watts and W. S. Landis; *Treasurer*, R. M. Burns; *Secretary*, Colin G. Fink. The convention was well attended and the sessions on fertilizers, copper by-products, and electric furnaces were unusually attractive. Reports from various centers showed increasing activities in the electrochemical industries.

THE council of the Geological Society of America has made the following announcement of nominations for officers for 1933: *President*, Dr. C. K. Leith, professor of geology, University of Wisconsin; *Vice-presidents*, Dr. Elwood S. Moore, professor of economic geology, University of Toronto; Dr. Rollin T. Chamberlin, professor of geology, University of Chicago; Dr. Edward M. Kindle, chief, division of paleontology, Canadian Geological Survey (from the Paleontological Society); Herbert P. Whitlock, curator of mineralogy, American Museum of Natural History, New York (from the Mineralogical Society); *Secretary*, Dr. Charles P. Berkey, professor of geology, Columbia University; *Treasurer*, Dr. Edward B. Mathews, professor of mineralogy and petrography and head of the department of geology, the Johns Hopkins University; *Editor*, Joseph S. Stanley-Brown, Robinson and Company, New York; *Councilors for 1933-1935*, Dr. Frank F. Grout, professor of geology and mineralogy, University of Minnesota, and Dr. W. O. Hotchkiss, president, Michigan College of Mining and Technology; *Representative of the Cordilleran Section*, Dr. Andrew C. Lawson, professor of mineralogy and geology, University of California; *Representative on the National Research Council*, Dr. Donald C. Barton, consulting geologist, chief of the division of the Rycade Oil Corporation. The present members of the council who will serve during 1933 also are Dr. Sidney Powers, chief geologist, Amerada Petroleum Corporation; Dr. Donnel F. Hewett, U. S. Geological Survey; George W. Stose, U. S. Geological Survey; Dr. Frank R. Van Horn, professor of geology and mineralogy, Case School of Applied Science; Dr. Alfred C. Lane, Pearson professor of geology and mineralogy, Tufts College, past president, 1932-1934, and Dr. Reginald A. Daly, professor of geology, Harvard University, past president, 1933-1935.

THE meeting in United States of the sixteenth International Geological Congress, originally planned for the summer of 1932, has been postponed for a year. Circulars with full information concerning the meetings will be distributed by the general secretary of the congress.

THE Pacific Section of the Botanical Society of America will meet with the Pacific Division of the American Association for the Advancement of Science at Pullman, Washington, on June 15, 16 and 17. The sessions will be of the usual type and all members of the society are cordially invited. The society will join with the American Association in its summer meeting at Syracuse. The meeting will be held on June 21, 22 and 23 and will follow the plan of its recent independent summer meetings. No papers will be read. Emphasis will be placed upon field trips and informal demonstrations and discussions. In the field trips the society will join with the Zoologists, the Ecological Society of America, the American Fern Society, the Torrey Botanical Club and others. Visits will be made under competent leadership to areas representative of the rich flora of Central New York. One all-day and two half-day excursions will be made, with an opportunity for the collection and preservation of specimens. In the fields of cytology and physiology it is expected that there will be demonstrations and informal discussion of exhibits.

THE fifth symposium in Theoretical Physics at the University of Michigan will be given in connection with the Summer Session beginning on June 27 and ending on August 19. In addition to other courses in experimental and theoretical physics offered by the Department of Physics, the following special series of lectures and seminars will constitute the symposium: "Selected Problems in Quantum Mechanics," Professor Werner Heisenberg; "Structure of the Atomic Nucleus," Professor George Gamow; "Theory of Hyperfine Structure of Spectral Lines," Professor Samuel A. Goudsmit; "Theory of Band Spectra," Professor David M. Dennison; "Quantum Mechanics," Professor Samuel A. Goudsmit, and "General Colloquium and Theoretical Seminars." A special announcement giving additional information about the work and accommodations may be had by writing the director of the physical laboratory, University of Michigan, Ann Arbor.

THE seventh annual meeting of the Acoustical Society of America was held on May 2 and 3 in the auditorium of the Bell Telephone Laboratories, New York City. At this meeting were reported the latest developments in electrical recording and reproducing of sound and in the acoustic aspects of radio broadcasting. Dr. Leopold Stokowski spoke on "New Horizons in Music" and H. A. Frederick, of the Bell Telephone Laboratories, on "Recent Fundamental Advances in Mechanical Sound Records on Wax Discs." He gave a demonstration using records produced by the vertical cut method. J. P. Maxfield, of Electrical Research Products, Inc., described the acoustic

pick-up for broadcasting the Philadelphia Symphony Orchestra. At the Tuesday morning meeting, the following papers were presented: "Acoustics of Broadcasting and Recording Studios," by G. T. Stanton and F. C. Schmid, of Electrical Research Products, Inc., and "Control of Broadcasting Pick-up from Studios," by C. G. Jones and J. P. Maxfield, Electrical Research Products, Inc.

LEADERS in industry representing both large and small concerns will convene at the Pennsylvania State College on May 19 and 20, for the thirteenth annual Industrial Conference sponsored by the School of Engineering. The general theme of the two-day session will be engineering education and the growing need for engineers in the sales and distributing forces of the country. Among the business executives who will participate in the conference will be C. S. Coler, Westinghouse Electric and Manufacturing Company; L. W. Kempton, American Steel and Wire; C. R. Beall, Union Switch and Signal; O. W. Eshbach and Col. R. I. Rees, American Telephone and Telegraph; F. M. Feiker, director of the Bureau of Foreign and Domestic Commerce, Washington, D. C., and Dean Dexter S. Kimball, college of engineering, Cornell University.

THE Fourth International Patents Exposition opened at the Grand Central Palace on May 10 and will close on May 29. The sponsors of this organization, of which Major-General George O. Squier is honorary chairman, and Herman Larson is managing director, have been engaged for several years in collecting all sorts of inventions from all parts of the world. The forthcoming exhibition will be the first to be made in New York, and this will be a forerunner of a more extensive exposition to be made at the World's Fair in Chicago next year.

THE annual Congress of the Royal Institute of Public Health is being held in Belfast from May 10 to 15, under the presidency of the Marquess of Londonderry. The congress has been divided into the following Sections: (I) State Medicine and Municipal Hygiene; (II) Industrial Hygiene; (III) Women and Children and the Public Health; (IV) Tuberculosis; (V) Pathology, Bacteriology and Biochemistry. The inaugural meeting was held in the Great Hall of Queen's University, at 11 A. M. on May 10, when the presidential address was delivered. Several general excursions were arranged, besides sectional visits to hospitals, sanatoria, etc., and certain institutions, centers and works were open for inspection.

DR. C. G. ABBOT, secretary of the Smithsonian Institution, writes: "Dr. T. Wayland Vaughan, director of the Scripps Institution of Oceanography of the

University of California, has solicited the aid of the Smithsonian in rehabilitating the library of the Geological Institute of the Kyoto Imperial University, whose entire collections of specimens and publications were destroyed when that establishment was burned recently. I venture to bring the matter to your attention and to ask whether you will be good enough to insert in *SCIENCE* an appeal for geological publications for the library of the Geological Institute. Any publications donated for that purpose may be forwarded here for transmission through the International Exchange Service to Japan. Beyond the transportation charges to Washington, which should be prepaid, there would be no cost to the senders of the publications in forwarding them to Japan. Packages should be addressed to "The Smithsonian Institution, International Exchange Service, Washington, D. C.," a letter of announcement being sent to the institution at the time of shipment."

*The Museum News* reports that a six-story building to be called the Maison Française has been included in the plans for Rockefeller Center, New York. It will occupy the northwest corner of Fifth Avenue and Forty-ninth Street, and will contain four hundred and thirty-seven exhibits on the art, industry and trade of France. In design it will duplicate the British Empire Building planned for the southwest corner of Fifth Avenue and Fiftieth Street.

A GRANT of \$1,232,652 from the Rockefeller Foundation to McGill University for the establishment of a neurological institution was recently announced. The cooperation of both provincial and civic authorities in this work has been assured; more than \$150,000 has been pledged by friends of the university and members of the governing board, and plans are well under

way to develop at the university a neurological center that will be second to none on this continent. The establishment of the institute will involve the construction of a new building, specially equipped for research in neurology, neurosurgery and the physiology and pathology of the nervous system. Dr. Wilder G. Penfield, clinical professor of neurological surgery at the university, has been appointed director. He will be assisted by a staff headed by Dr. Colin Russell, Dr. F. H. MacKay and Dr. W. V. Cone.

THE twenty-first annual report of the Brooklyn Botanic Garden, 1931, calls attention to the fact that during the past year the attendance at the Botanic Garden was nearly 96,000 more than the year before, and the permanent endowment funds increased by \$12,420. The total attendance for the year was more than 1,100,000, equal to nearly half the population of Brooklyn, and the permanent endowment fund is now nearly \$1,004,000. The report calls attention to the extensive educational program of the garden, including the extensive cooperation with the public and private schools of greater New York. The school service included the supplying of nearly 5,500 Petri dishes filled with sterilized agar for the classes in biology in the high schools of all five boroughs of greater New York, and the supplying of living plant material for botanical and nature study work to more than 5,700 teachers for the instruction of nearly 224,000 pupils. A special section of the report is devoted to the research work in progress at the garden along the lines of plant pathology, disease resistance in plants, forest pathology, especially in connection with the chestnut blight, an extensive beardless iris project, and work in systematic botany and genetics. Seven students are enrolled at the garden for graduate study and other research.

## DISCUSSION

### MISNAMED CULTURES AND STUDIES OF THE TUBERCLE BACILLUS

ONE of the recent trends of research with the tubercle bacillus, as reported in the literature, has been the attempts to demonstrate variations in that organism. The effect of these reports apparently has been to create a belief that the original Koch bacillus is only one form of a highly variable micro-organism. This belief has led certain research workers to use in their studies organisms which they designated as tubercle bacilli but which, in all probability, were only acid-fast saprophytes.

The only definite criteria for identifying an organism as a tubercle bacillus are those based upon the personal observations of the workers, since there is no adequate description given in the various classi-

fications. We believe that an organism upon isolation from lesions or any other natural source should conform in general to the following description, in order to be classed as a human or bovine tubercle bacillus.

- (1) It grows between 30 and 40° C., the optimum temperature being 37° C.
- (2) It is a slow grower, requiring about 4 days to 1 week for visible growth to occur, and 2 to 4 weeks to reach its full development.
- (3) It does not grow on plain agar.
- (4) It grows only on the surface of liquid media, and the inoculum must be floated on the surface. There is no clouding of the medium at any time.
- (5) When grown on liquid media, it produces the essential substances of tuberculin, *i.e.*, it will produce the tuberculin reaction when injected into tuberculous animals.