Education (Q): George D. Stoddard, State University of Iowa.

Members of the Sectional Committees:

Mathematics (A): J. M. Thomas, Duke University.

Physics (B): L. A. DuBridge, University of Rochester.

Chemistry (C): James F. Norris, the Massachusetts Institute of Technology.

Astronomy (D): Charles P. Olivier, the University of Pennsylvania.

Geology and Geography (E): W. T. Thom, Jr., Princeton University.

Zoological Sciences (F): J. W. Buchanan, Northwestern University.

Botanical Sciences (G): J. M. Beal, the University of Chicago.

Anthropology (H): John Cooper, Catholic University, Washington, D. C.

Psychology (I): Frederic L. Wells, Harvard University.

Social and Economic Sciences (K): Stuart Rice, Central Statistical Bureau, Washington, D. C.

Historical and Philological Sciences (L): Alexander Pogo, Library of Congress.

Engineering (M): J. W. Barker, Columbia University.

Medical Sciences (N): C. A. Doan, the Ohio State University.

Agriculture (O): Richard Bradfield, Cornell University.

Education (Q): F. B. Knight, State University of Iowa.

Finance Committee: Wilson Compton, Washington, D. C.

Committee on Grants: F. K. Richtmyer, Cornell University; G. H. Parker, Harvard University.

Executive Committee of the Council: G. D. Birkhoff, Harvard University; E. B. McKinley, George Washington University School of Medicine.

Trustee of Science Service—nominated: Henry B. Ward, Urbana, Illinois.

SCIENTIFIC NOTES AND NEWS

DR. LYMAN J. BRIGGS, director of the National Bureau of Standards, was elected president of the American Physical Society at the Indianapolis meeting. Other officers elected were: Dr. John T. Tate, of the University of Minnesota, *vice-president;* Professor W. L. Severinghaus, of Columbia University, *secretary,* and Dean George B. Pegram, of Columbia University, *treasurer.*

DR. ROBERT G. AITKEN, director emeritus of the Lick Observatory of the University of California, was installed as president of the American Astronomical Society at the recent meeting at Indiana University. Dr. Henry Norris Russell, of Princeton University, gave the address of the retiring president.

OFFICERS of the American Meteorological Society were elected as follows: Dr. Willis Ray Gregg, chief of the U. S. Weather Bureau, *president;* Dr. George F. McEwen, of the Scripps Institution of Oceanography of the University of California, *vice-president;* Dr. Charles F. Brooks, professor of meteorology at Harvard University and director of the Blue Hill Meteorological Observatory, *secretary,* and L. T. Samuels, of the U. S. Weather Bureau, *treasurer.*

AT the Washington meeting of the Geological Society of America Dr. Arthur L. Day, director of the Geophysical Laboratory of the Carnegie Institution, was elected president. He succeeds Dr. Charles Palache, of Harvard University. Vice-presidents elected were: Dr. T. Wayland Vaughan, formerly director of the Scripps Institution of Oceanography; Dr. Warren J. Mead, of the Massachusetts Institute of Technology; Dr. Joseph A. Cushman, Cushman Laboratory of Foraminiferal Research, Sharon, Mass., and Dr. Norman L. Bowen, of the University of Chicago. Dr. Charles P. Berkey, of Columbia University, since 1922 secretary of the society, was reelected.

DR. VERNOR C. FINCH, of the University of Wisconsin, was elected president of the Association of American Geographers at the recent meeting held at the University of Michigan to succeed W. L. G. Joerg, of the National Archives, Washington. Other officers elected were: Griffith Taylor, of the University of Toronto, *vice-president;* Guy-Harold Smith, of the Ohio State University, *treasurer,* and Clarence F. Jones, of Clark University, *councilor.* Preston E. James, of the University of Michigan, was reelected *secretary.*

DR. ELLIS THOMSON, of the University of Toronto, was elected at the Washington meeting president of the Mineralogical Society of America, and Professor Kenneth K. Landes, of the University of Kansas, was named vice-president. Dr. Paul F. Kerr, of Columbia University, was reelected secretary.

THE American Mathematical Society has voted that the volume for 1938 of the *Bulletin* of the society be dedicated to Dr. E. R. Hedrick, vice-president of the University of California and provost of the university at Los Angeles, with the following inscription: "By order of the Council of the Society, this volume is dedicated to Earle Raymond Hedrick in appreciation of his services to the society as editor-in-chief of the *Bulletin* for the past seventeen years."

AT the Indianapolis meeting of the American Association for the Advancement of Science the $1,000 prize, given annually for an "outstanding" paper pre-

sented at the meeting, was awarded to Dr. Philip R. White, of the department of animal and plant pathology of the Rockefeller Institute for Medical Research at Princeton, N. J., for a paper presented before the Section for the Botanical Sciences and the Botanical Society of America entitled "Root Pressure—an Unappreciated Force in Sap Movement." The first Theobald Smith award in medicine, established by Eli Lilly and Company, was given to Dr. Robley D. Evans, of the Massachusetts Institute of Technology, for his address entitled "Biophysical Studies of Chronic Radium Poisoning."

DR. ERNEST W. GOODPASTURE, professor of pathology at Vanderbilt University School of Medicine, was presented with the research medal of the Southern Medical Association at the annual meeting, which was held in New Orleans from November 30 to December 3. The award was made in recognition of his investigations of virus diseases.

SIR AMBROSE FLEMING, inventor of the thermionic valve, has been made an honorary life fellow of the Royal Society of Arts, London, "in view of the many services he has rendered to the society during the past fifty years." Only five such fellowships have been conferred during the past ten years.

DR. CARL KOLLER, New York City, who in 1884 introduced cocaine as a local anesthetic in operations on the eye, celebrated his eightieth birthday on December 3.

UNDER the reorganization plan of the College of Agriculture of the University of California the college will be administered as a whole, without designation of branches in either northern or southern parts of the state. Dean Hutchison will retain his titles of dean of the College of Agriculture and director of the Agricultural Experiment Station, at Berkeley; Dr. S. B. Freeborn will be assistant dean and assistant director of the experiment station; Professor B. H. Crocheron will continue as director of the Agricultural Extension Service. At Davis, Professor Knowles A. Ryerson will be made assistant dean of the College of Agriculture, the title of director of the branch of the college being abolished. At Los Angeles, Dr. William H. Chandler, professor of pomology, now at Berkeley, will be placed at the head of the work in agriculture as assistant dean. Dr. L. D. Batchelor will continue as director of the Citrus Experiment Station at Riverside. The positions of director and assistant director of the branch of the College of Agriculture in southern California will be abolished.

THE retirement is announced of seven members of the faculty of the University of Maryland under the State Retirement Act which was passed at the last session of the Legislature. These are: Dr. H. J. Patterson, formerly president of the university and dean of the college of agriculture; Dr. A. N. Johnson, dean of the college of engineering; Dr. H. B. McDonnell, professor of agricultural chemistry; Professor Harry Gwinner, professor of engineering mathematics; Dr. W. T. L. Taliaferro, professor of farm management; J. T. Spann, associate professor of mathematics, and C. J. Pierson, professor of zoology.

DR. JAMES FRANCK, professor of physics at the Johns Hopkins University, has been awarded a grant of $2,000 a year for three years under the Friedenwald Foundation for the study of photosynthesis.

THE Committee on Scientific Research of the American Medical Association has made a grant to Dr. Warren O. Nelson, professor of anatomy at Wayne University, for a study of thymus function and for a continuation of his study on synthetic androgens.

The Cornell Alumni News writes: "Dr. Liberty Hyde Bailey, Agriculture, Emeritus, seventy-nine years young, has returned to his Hortorium in Ithaca from exciting adventure in the South Seas. During a trip to collect palms in some of the uncharted islands of the Bahamas, he and a companion were caught in a tropical storm at sea in an eighteen-foot open skiff, without food and water for five days and four nights, and were raked with gunfire in a native brawl. 'But I got what I went after,' Dr. Bailey says."

L. J. WILD, principal of the Agricultural High School at Feilding, New Zealand, regent of the University of New Zealand, president of the Royal Agricultural Society of New Zealand, who is visiting the United States, recently spent four or five days inspecting the work in progress at the Davis branch of the College of Agriculture of the University of California.

THE delegation from the British Association for the Advancement of Science to the Jubilee Session of the Indian Science Congress in Calcutta, which is being held from January 3 to 9, arrived at Bombay on December 17. Sir James Jeans, who presides at the congress in the place of the late Lord Rutherford, and Dr. O. J. R. Howarth, secretary of the association, were members of the party.

DR. CHARLES GORDON HEYD, New York, past president of the American Medical Association, gave on December 18 the annual William Cline Borden Memorial Lecture in surgery at the George Washington University School of Medicine. His subject was "Thyroid Disease."

DR. WALTER TIMME, professor of clinical neurology,

College of Physicians and Surgeons, Columbia University, delivered the twelfth annual Stanford E. Chaillé Memorial Oration before the Orleans Parish Medical Society, Louisiana. He spoke on "Status Hypoplasticus."

THE annual conference of the British Geographical Association was held at the London School of Economics from January 4 to 6, under the presidency of Professor Patrick Abercrombie. His address was entitled "Geography, the Basis of Planning."

PROFESSOR E. CARTAN, of the University of Paris, has been appointed Rouse Ball lecturer at the University of Cambridge for the year 1937–38.

THE fiftieth meeting of the American Physiological Society and the thirty-second meeting of the American Society of Biological Chemists will be held in Baltimore from March 30 to April 2, in conjunction with the meetings of the other organizations comprising the Federation of American Societies for Experimental Biology. The headquarters will be at the Lord Baltimore Hotel.

THE annual summer term of the American School of Prehistoric Research will open in Berlin on July 1. The tentative program includes lectures, seminars, museum studies, practice in excavating and excursions to outstanding prehistoric sites in various parts of Germany, Czechoslovakia, Austria, Hungary and Yugoslavia. Dr. V. J. Fewkes, who has been in charge of three previous summer terms, will again be acting director. Students will have opportunities to excavate in several important Neolithic and Iron Age sites. The term will close in Prague on September 10. Prospective students should apply as soon as possible. Applications for enrolment and for further information should be addressed to Dr. George Grant MacCurdy, director of the American School of Prehistoric Research, Old Lyme, Conn.

THE proposal of the council of the Royal Society that the number of candidates selected for election annually shall be twenty instead of seventeen was approved at the anniversary meeting on November 30. The first election of twenty fellows will take place in March.

ANNOUNCEMENT is made of the forthcoming publication of an "Annual Review of Physiology" in which it is proposed to review the developments of the preceding year or biennium in the major fields of physiological research. The series will appear under the auspices of the American Physiological Society, Inc., and the Annual Review of Biochemistry, Ltd. The new review will conform in general style and format to the "Annual Review of Biochemistry." The Joint Board of Management is to consist of Chauncey D. Leake, University of California; J. Murray Luck, Stanford University; W. J. Meek, University of Wisconsin, and Carl L. A. Schmidt, University of California. The Editorial Committee comprises: A. J. Carlson, University of Chicago; J. F. Fulton, Yale University; M. H. Jacobs, University of Pennsylvania; F. C. Mann, University of Minnesota and the Mayo Foundation, and W. J. Meek, University of Wisconsin. J. Murray Luck will serve as managing editor. The first volume is expected to appear in February, 1939.

THE Mt. Desert Island Biological Laboratory at Salsbury Cove, Maine, is planning to offer next summer a course in invertebrate zoology, with special emphasis on marine forms, for college undergraduates and graduates. A new laboratory is being built and will be named "The Isabelle Zabriskie Hegner Laboratory" in memory of the daughter of Dr. and Mrs. Robert W. Hegner, who have given funds for the purpose. Ample supplies of running sea water and other facilities for the study of living animals will be a feature of the laboratory. A maximum of twenty-four students will be accepted. The course of six weeks' duration will be under the general supervision of Professor Ulric Dahlgren, of Princeton University, with the assistance of Professors Gardiner B. Moment, of Goucher College, and J. Wendell Burger, of Trinity College. Special lectures in their respective fields will be given by other members of the laboratory colony, among whom are Professors R. W. Hegner, H. V. Neal, W. H. Lewis, H. W. Smith, E. K. Marshall, Jr., and D. E. Minnich. Prospective students may secure further information from the director, Professor William H. Cole, Rutgers University, New Brunswick, N. J.

ON account of the removal of the McCormick Memorial Institute from its own building to the University of Chicago, it has been necessary to find new quarters for the American Type Culture Collection. It is now established in the Georgetown University Medical School, Washington, D. C., with Dr. Mario Mollari, professor of bacteriology, as curator, and Dr. O. A. Bushnell as assistant curator. Dr. Bushnell, who will give full time to the work of the collection, is a graduate of the University of Hawaii, where he specialized in bacteriology and mycology, and has recently taken his doctor's degree at the University of Wisconsin. For several years he has had charge of the maintenance and distribution of the large collection of legume bacteria of the Wisconsin Experiment Station. Through the cooperation of several Washington laboratories it has been possible to increase the number of cultures and enlarge the scope of the collection. Protozoa, which the collection has

never attempted to carry, are now available for distribution.

CONSTRUCTION has been started for the new chemical research laboratory at Brown University, which has been made possible through a gift of $500,000 from Jesse H. Metcalf, formerly United States senator from Rhode Island, a member of the Board of Trustees. The laboratory will provide facilities for research in photochemistry and electrochemistry. Architecturally, it will harmonize with the early Georgian design of other buildings on the west campus. The outside will be brick with white stone and wood trim, 130 feet long, 48 feet wide and 54 feet high. It will adjoin the Jesse Metcalf Memorial Chemical Laboratory, named for the father of Mr. Metcalf. There will be sixty-one rooms for research, conferences, offices and for special technical purposes, accommodating between 30 and 40 graduate research workers. Facilities at the university for advanced chemistry will be doubled when the building is finished. There will be a new divisional library of 60,000 volumes capacity on chemistry, physics and mathematics. Some of the laboratories will be air-conditioned. The largest laboratory will be used for undergraduate instruction in physical chemistry.

DISCUSSION

TUBERCULOSIS, LEPROSY AND OTHER DISEASES CAUSED BY ACID-FAST BACTERIA[1]

THE purpose in preparing this symposium and in publishing in monograph form the papers composing it is to bring into prominence a disease process caused by a group of micro-organisms which, while closely grouped as a family, are yet separated by cultural, chemical, morphological and biological attributes. This family is called the *Acid-Fast Family* for simplicity's sake because all its members, those that cause sickness and those that cause no sickness, have the attribute of retaining dye when attempt is made to bleach this out with an acid or other decolorizing solution. They are called in scientific literature *Mycobacterium,* a genus of the *Mycobacteriaceae* family.

The members of this acid-fast family which are great producers of disease in man are the various strains of *Mycobacterium tuberculosis,* which cause tuberculosis, and of *Mycobacterium leprae,* which cause leprosy. In the animal kingdom various strains of the tubercle bacillus attack our food supply by producing tuberculosis in cattle, fowl, swine and other species. There are also strains of the tubercle bacillus which cause disease only in cold-blooded animals and live only at lower temperatures than are found in the bodies of warm-blooded animals. The Johne's bacillus, another member of this family, also takes heavy toll among cattle and allied species. Bacteria apparently allied to the leprosy bacillus cause a leprosy-like disease in rats and other rodents.

In addition to these disease-producing strains there are numerous strains of the acid-fast family which do not produce disease, for example, the timothy grass bacillus, which lives in the soil or on grasses, or the smegma bacillus, which dwells about the genitals of humans and some animals. Hagan, Rhines and others have succeeded in cultivating many strains of acid-fast bacteria from the soil.

The most striking common feature of the disease process caused by all those strains of the acid-fast family which cause sickness is that, regardless of whether the disease is fatal or not, the germ for part of its life history thrives inside of one cell of the body, known as the monocyte. This monocyte wanders about the body by its own motive power or is transported by blood and lymph stream. It may even carry the germ into the body from the outside, for example from the air passage. Later, rendered sluggish by the germs multiplying within it, the monocyte may stop in any part of the body, and where it stops disease may arise.

There are localities, different in different animals, where apparently the monocyte has special functions to perform. Such places are the lungs, the lymph glands, the gut, the spleen and the liver. As an illustration of this (and this is only one factor in the whole story) various strains of the human tubercle bacillus cause tuberculosis in man most frequently in the lungs, where monocytes are very abundant. This means that the monocytes found in the lungs perform some special function there, which probably means that they have likewise some very delicate or special internal chemistry. It does not require a great stretch of the imagination to conclude that in the early life history of this symbiosis between bacillus and monocyte there is some chemical factor that is common to both through which they contend for the same food supply. The same conclusion is logical about the monocytes of the lungs of cattle and strains of the bovine tubercle bacillus, the monocytes of the large gut of cattle and the Johne's bacillus, the monocytes

[1] Statement introducing the monograph of the American Association for the Advancement of Science, containing the papers presented in the Denver symposium, now in press for publication by The Science Press.