Byers, *Vice-president;* H. D. Harradon, *Secretary.*

Terrestrial Magnetism and Electricity—H. F. Johnston, *President;* Irwin Roman, *Vice-president;* D. G. Knapp, *Secretary.*

Oceanography—H. U. Sverdrup, *President;* W. L. Schmitt, *Vice-president;* L. P. Disney, *Secretary.*

Volcanology—R. E. Fuller, *President;* Howel Williams, *Vice-president;* F. G. Wells, *Secretary.*

Hydrology and Tectonophysics held no elections, the present officers continuing in office as follows:

Hydrology—J. E. Church, *President;* L. G. Straub, *Vice-president;* K. H. Beij, *Secretary.*

Tectonophysics—E. Cloos, *President;* L. L. Nettleton, *Vice-president;* M. K. Hubbert, *Secretary.*

H. D. Harradon, secretary of the Section on Meteorology, reports that a Committee on Extended Forecasting has recently been established in the Section of Meteorology by Dr. C. W. Thornthwaite, president of the section. The functions of the committee are (1) to keep abreast of developments in the field of extended forecasting (involving any period in excess of 48 hours); (2) to furnish desired information to agencies or individuals concerning material or publications on extended forecasting and to expedite the preparation of bibliographies on the subject; (3) to furnish opinions on various methods of long-range forecasting to reputable sources desiring such information. These opinions will be based as much as possible on a scientific evaluation of the technique, preferably through objective valuation, and (4) to issue resolutions recommending that certain promising lines of attack on the problem of extended forecasting be encouraged.

The committee consists at present of the following members: Robert C. Elliott, Jerome Namias (chairman), Horace W. Norton, Carl-Gustav Rossby, Harry Wexler and Hurd C. Willett.

SCIENTIFIC NOTES AND NEWS

THE Faraday Medal of the British Institution of Electrical Engineers, which was awarded last February to Dr. Irving Langmuir, associate director of the Research Laboratories of the General Electric Company, Schenectady, N. Y., was presented to him on June 26 at the St. Louis meeting of the American Institute of Electrical Engineers.

THE Distinguished Service Medal and Award of the American Medical Association for 1944 were conferred at the Chicago meeting on Dr. George Dock, of Pasadena, Calif., formerly professor of medicine at the School of Medicine of Washington University, St. Louis.

DR. ANTON J. CARLSON, emeritus professor of physiology at the University of Chicago School of Medicine, president of the American Association for the Advancement of Science, received the annual Friedenwald Medal at the annual banquet of the American Gastroenterological Association on June 12. The presentation was made by Dr. Andrew C. Ivy, professor and head of the department of physiology and pharmacology of the Medical School of Northwestern University.

THE Royal Asiatic Society of Bengal has awarded the P. N. Bose Memorial Medal for 1943 to Sir Lewis Fermor, formerly director of the Geological Survey of India, "in recognition of his conspicuously important researches on the Archæan Rocks of India."

ABOUT a hundred and fifty university colleagues and friends of Dr. William Albert Riley gathered on May 29 at an informal reception sponsored by the division of entomology and economic zoology and the department of zoology of the University of Minnesota, as a token of appreciation of his long and fruitful services to the university which culminated with his retirement at the close of the academic year. A number of gifts were presented to Dr. and Mrs. Riley on behalf of the guests participating in the reception.

P. H. BATES, chief of the clay and silicate products division of the National Bureau of Standards, has been chosen president of the American Society for Testing Materials.

SAMUEL B. WILLIAMS, editor of *The Electrical World,* has been elected president of the Illuminating Engineering Society.

NEBRASKA WESLEYAN UNIVERSITY has conferred the degree of doctor of science on Dr. E. I. Fulmer, professor of chemistry at Iowa State College.

THE honorary degree of doctor of science was conferred on June 18 at the ninety-first annual commencement of Antioch College on Dr. Austin M. Patterson, professor emeritus of chemistry.

DR. ALFRED E. COHN, who has reached the age of retirement, has been made a member emeritus of the Rockefeller Institute for Medical Research. Dr. René J. Dubos, George Fabyan professor of comparative pathology and professor of tropical medicine at the Harvard Medical School, has been elected a member. Dr. Walther F. Goebel has been promoted from associate member to member, and Dr. Robert F. Watson has been promoted from assistant to associate.

THE retirement on July 1 is announced of Samuel N. Spring, of Syracuse University, dean of the New York State College of Forestry.

DR. GEORGE S. FORBES, professor of chemistry at Harvard University, has been appointed chairman of the department of chemistry.

PROFESSOR RALPH B. WILEY, head of the School of Civil Engineering of Purdue University, has become head of the newly established School of Civil Engineering and Engineering Mechanics, which has been formed by merging the department of applied mechanics and the department of civil engineering.

DR. BENJAMIN HARROW, professor of chemistry of the College of the City of New York, has been elected chairman of the department. He succeeds Dr. William L. Prager.

PROFESSOR RALPH M. HIXON has been named head of the department of chemistry at the Iowa State College. He is also head of the sub-section of plant chemistry of the Agricultural College.

DR. KURT G. STERN, formerly a member of the department of physiological chemistry of Yale University, since 1942 chief research chemist of the Overly Biochemical Research Foundation, New York, has joined the department of chemistry of the Polytechnic Institute of Brooklyn, N. Y. His research at that institution will be conducted under the auspices of the Carrie S. Scheuer Foundation.

AT the University of Oklahoma the following members of the faculty have been promoted to full professorships: Dr. James C. Colbert and Kenneth E. Cook, in chemistry; Dr. Milton Hopkins and Dr. O. J. Eigsti, in plant sciences, and Dr. O. F. Evans, in geology.

THE retirement is announced of Dr. Charles G. Abbot, since 1928 secretary of the Smithsonian Institution, with which he has been connected since 1895. He will continue as research associate of the institution, and plans to devote his time to the study of the physical conditions on the sun.

DR. HUGH H. SMITH, since 1930 a member of the staff of the International Health Division of the Rockefeller Foundation, has been appointed regional director for the United States. He succeeds Dr. John A. Ferrell, who has been made medical director of the John and Mary R. Markle Foundation.

DR. EUGENE M. LANDIS, George Higginson professor of physiology at the Harvard Medical School, has been elected a member of the Council on Pharmacy and Chemistry of the American Medical Association.

FREDERICK R. LACK, vice-president and manager of the Radio Division of the Western Electric Company, was elected a director of the Radio Manufacturers Association at the twentieth annual meeting held in Chicago on June 6 and 7.

AN Ophthalmology Branch has recently been established in the Surgery Division of the Surgeon General's Office with Major M. E. Randolph, Medical Corps, as chief. This branch will concern itself with all matters pertaining to ophthalmology in the Army.

ROBERT E. WATERMAN has been appointed a vice-president and director of the Schering Corporation, pharmaceutical manufacturers of Bloomfield, N. J. He will be associated with the chemical and medical research divisions. Mr. Waterman is a part-time consultant for the alien property custodian as special representative in the production of atabrine.

DR. HORACE S. TELFORD, head of the department of entomology of the North Dakota Agricultural College and Experiment Station at Fargo, has joined the research department of Hess and Clark, Inc., at Ashland, Ohio. He will conduct research in veterinary entomology.

DR. CHARLES F. MEYER, assistant professor of physics in the College of Liberal Arts of Wayne University, has been granted leave of absence by the Board of Education of Detroit. He will work as a research physicist in the laboratory of applied physics of the Johns Hopkins University.

RUSSELL GIBSON, associate professor of economic geology and tutor in the department of geology and geography of Harvard University, has leave of absence and is working with a mining company in South America.

STANLEY F. MORSE, of Winter Park, Fla., agricultural consultant in private practice for the past twenty-five years, is chief of the American Food Mission which has been sent to French North Africa by the U. S. Foreign Economic Administration. The mission will cooperate with and assist the French Committee of National Liberation in its attempts to restore food production to its pre-war volume in Tunisia, Algeria and Morocco. An increased output of foodstuffs is essential in North Africa to help to feed the Allied Armies and the liberated countries of Europe besides saving vital shipping space and relieving the drain on American food supplies. Mr. Morse formerly was director of agricultural extension for the State of Arizona and the U. S. Department of Agriculture. He also has worked in Latin America and in Europe.

PROFESSOR L. H. SNYDER, chairman of the department of zoology and entomology at the Ohio State

University, delivered two lectures at Iowa State College on June 15 and 16. He spoke on "Heredity and Modern Life" and on "The Mutant Gene in Man."

PROFESSOR SIDNEY RUSS, professor of physics at the Medical School, Middlesex Hospital, London, gave on May 20 the twenty-third Silvanus Thompson Memorial Lecture of the British Institute of Radiology. The lecture was entitled "The Man Silvanus Thompson."

DR. E. D. ADRIAN, F.R.S., professor of physiology at the University of Cambridge, gave on June 8 the Bertram Louis Abrahams Lecture at the Royal College of Physicians of London. His subject was "Localization in the Cerebrum and Cerebellum."

THE Zoological Garden of Philadelphia celebrated on July 1 the seventieth anniversary of its founding.

THE *Journal* of the American Medical Association states that this year at its fourth annual meeting in Chicago, the American Diabetes Association on June 11 for the first time awarded the Banting Memorial Medals to all ex-presidents and to all Banting lecturers of the association. The medal was established in honor of Dr. Frederick Banting, who at the time of his death was honorary president of the association. Two medals will be awarded each year, one to the outgoing president and one to the lecturer. Presidents to whom medals have been awarded are Drs. Cecil Striker, Cincinnati; Herman O. Mosenthal, New York, and Joseph T. Beardwood, Philadelphia. Lecturers who have received the award are Drs. Elliott P. Joslin, Boston, first Banting lecturer; Dr. William Muhlberg, Cincinnati, and Colonel Leonard G. Rowntree, M.C. Dr. Joseph H. Barach, of Pittsburgh, was elected president of the association at the recent session. Drs. Russell M. Wilder, Rochester, Minn., and Edward S. Dillon, Philadelphia, were elected vice-presidents.

THE twenty-seventh summer meeting of the Mathematical Association of America will open at Wellesley College, Massachusetts, on August 12, in conjunction with the summer meeting and colloquium of the American Mathematical Society and the meeting of the Institute of Mathematical Statistics. Two sessions of the association will be held on Saturday beginning at 2:30 P.M. and 7:30 P.M. The sessions of the American Mathematical Society will be held on Sunday and Monday. Four colloquium lectures will be given by Professor Einar Hille, of Yale University, his subject being "Selected Topics in the Theory of Semi-Groups." These lectures will be given at 9 A.M. and 2 P.M. on Sunday and Monday. Professor C. C. MacDuffee, of the University of Wisconsin, will give an address at 3:15 P.M. on Sunday, "On the Composition of Algebraic Forms of Higher Degree." A joint session of the association and the Institute of Mathematical Statistics will be held on Saturday evening at 7:30. A reception will be given afterwards by Wellesley College, and on Sunday evening there will be a dinner, followed by a musical entertainment.

THE following is a list of chemicals wanted by the National Registry of Rare Chemicals, Armour Research Foundation, 33rd, Federal and Dearborn Streets, Chicago 16, Ill.: 2-Thio uracil, trimethyl boron, 1,1,1-Tribrom tert. butyl alcohol (Brometone), vinyl trichlor acetate, thallium sulfide, 1,2,5,8-tetrahydroxy anthraquinone, triamino trimethyl amine, sodium salt of nitrohydroxylamine, sodium N,N-diethyl dithiocarbamate, sphingomyelin polyvinyl phthalate, 2-Nitro-4-cyclohexyl acetanilide, methyl nitrite, gray tin (1 g), decaborane, 2,2′,2″-tripyridyl, cadmium xanthate, borobutane and actinium.

A STATE-CONTROLLED hospital program calling for an investment of about $15,000,000 in five general hospitals, seventy clinics and emergency hospitals and a research laboratory is planned by the State of Arkansas. Additional taxes on natural resources will be necessary for its support, and the question will be submitted to the voters at the next general elections. The act would appropriate $5,000,000 for each of the fiscal years beginning February 15, 1945, and February 15, 1946. Of the appropriations $3,500,000 would be for capital expenditures, $900,000 for general operating expenses, $500,000 for salaries and $100,000 for research. Three commissioners would be appointed to seven-year terms by the Governor with the consent of the Senate. They would receive $5,000 a year. A general auditor and general purchasing agent would receive $5,000 a year and a secretary-treasurer $4,200. The commission would fix the duties and the salary of all other employees.

BESTOWED "in recognition of meritorious service rendered to the Army Air Forces Training Command during World War II," a Certificate of Service Award was presented to the Michigan College of Mining and Technology on June 8. The award is signed by Lieutenant-General B. K. Yaunt, Army Air Forces Training Command. Honor guests at the ceremony included Rear Admiral H. S. Kendall, chief of the Air Training Command, U. S. Navy.

The Times, London, states that at the first meeting of the British Iron and Steel Research Association Sir James Lithgow was elected president and Dr. Andrew McCance was elected chairman. Immediate steps are being taken to appoint a director of research and a principal administrative officer of the association. In

the meantime, pending completion of the organization of the staff, the Iron and Steel Industrial Research Council will continue to be responsible for the large volume of research which is at present in progress, and the transfer of responsibility for the direction of this will not be made until the new organization is complete with director and headquarters staff. With the liberal financial provision which has been made by the British Iron and Steel Federation for an expenditure up to £250,000 per annum, a considerable expansion in present research activities is expected immediately the requisite personnel becomes available.

DISCUSSION

VARIANTS IN FUNGI: FORMATION, REVERSION AND PREVENTION

AN article by Hansen and Snyder[1] suggests nuclear heterogeneity (heterocaryosis)[2] as the probable cause of losses in ability of *Penicillium notatum* Westling cultures to form penicillin, and suggests remedies. The description of variant strains also applies to variants of *Aspergillus niger* v. Tiegh. obtained through chemical induction by Thom and the writer.[3] Nitrous acid and other compounds were used.[4] Reversion of variants to normal-appearing strains could be brought about by growth on high concentrations of amino acids, particularly lysine. Loss in ability to differentiate was attributed to upsets in the characteristic basal complement of enzymes employed in the utilization of amino acid nitrogen in the normal strain.[5] Inability to differentiate seemed proportional to extent of inability to utilize amino acid nitrogen, particularly hydroxyproline. The culture of *A. niger* employed has proved stable under laboratory conditions for twenty-seven years.

The use of amino acids may prove helpful in recovery of the normal strain of *P. notatum* after variant formation, though in some instances the reversion form is not identical with the initial strain. There is a distinct possibility that a cycle of variant formation and reversion might lead to better penicillin producers for this reason.

Autolyzed cultures of *A. niger* produce variants that seem to be eliminated by culturing at optimum temperature and frequent transfers. The procedure now used to maintain stock cultures in liquid medium includes growth at optimum temperatures until spore formation is well under way and storage in the ice-box at 10° C. until needed.

ROBERT A. STEINBERG

BUREAU OF PLANT INDUSTRY, SOILS AND AGRICULTURAL ENGINEERING,
BELTSVILLE, MD.

1 H. N. Hansen and W. C. Snyder, SCIENCE, 99: 264, 1944.
2 H. N. Hansen and R. E. Smith, *Phytopath.*, 22: 953, 1932.
3 C. Thom and R. A. Steinberg, *Proc. Nat. Acad. Sci.*, 25: 329, 1939.
4 R. A. Steinberg and C. Thom, *Proc. Nat. Acad. Sci.*, 26: 363, 1940.
5 R. A. Steinberg and C. Thom, *Jour. Agr. Res.*, 64: 645, 1942.

BACTERIOSTATIC AND FUNGISTATIC ACTION OF SOME ORGANIC CHEMICALS[1]

A RECENT abstract in *Chemical Abstracts*[2] reporting the use of sodium selenite in the isolation of paratyphoid bacilli in feces suggested the publication of some observations made in 1940. While attempting to develop a non-sterile technic for studying sugar absorption and assimilation of higher green plants, it was noted that several organic antiseptic chemicals possessed selective bacteriostatic and fungistatic activity.

The results presented in Table I were obtained in a diamalt agar media. The cultures were inoculated with a composite mixture of those air-borne microorganisms which were capable of growing in a liquid media comprised of inorganic nutrients and 0.25 per cent. glucose. The incubation period to determine the selective inhibitory action of the chemicals was six days at 30° C.

TABLE I

BACTERIOSTATIC AND FUNGISTATIC ACTION OF SOME ORGANIC CHEMICALS

Chemical	Concn. in p.p.m.	Selective inhibitory action	
		Bacteria	Fungi
Anisic acid	150	+	−
Benzoic acid	150	+	−
Chrysoidine Y	60	±	−
Chlorothymol	60	−	+
Hexylresorcinol	80	−	+
Sodium 2, 4, 5 trichlorophenate	10	−	±
8-hydroxy quinoline sulfate	10	−	±
Sodium ortho-phenyl phenate	60	−	±

Note: (+) Indicates inhibitory action.
(−) Indicates no inhibitory action.

The data suggest that some of these chemicals may have possible use in the separation of bacteria and fungi. It will be noted that anisic acid, benzoic acid and possibly chrysoidine Y at the concentrations tested selectively inhibited bacterial growth. Chlorothymol and hexylresorcinol selectively inhibited fungal

1 Journal Paper No. 161 of the Purdue University Agricultural Experiment Station.
2 M. A. Gohar. Sodium Selenite as a Bacteriostatic Substance and Its Use in the Isolation of Paratyphoid Bacilli. *J. Trop. Med. Hyg.*, 46: 29–32, 1943. (*Chem. Abst.*, 37: 5995, 1943).