havior of invertebrates and vertebrates. He detected a trend in the evolution of animals from "protocooperation" toward well-defined cooperative behavior, and produced much evidence for the antecedents of human social behavior.

Allee's ability to overcome emotional and physical distress and to continue at a sustained level of scientific productivity is an inspiration to his many colleagues and students. He demonstrated responsibility, honesty, self-discipline, and personal integrity to an outstanding degree and has made a lasting contribution to biological science. He has left behind a host of friends who hold him in affectionate regard.

ALFRED E. EMERSON
THOMAS PARK
Department of Zoology, University of Chicago

News and Notes

Western Water

Papers presented at the recent Pacific Southwest regional meeting of the American Geophysical Union emphasized water problems of particular interest in the West. The meeting, held at the University of California, Berkeley, on 4–5 February, was attended by 150 registrants.

A high point of the first day's sessions was a symposium on *Hydrology and Oceanography of San Francisco Bay*. Studies of San Francisco Bay, including tides, currents, salinity intrusion, sediment deposition, and streamflow, have been stimulated by the comprehensive investigation of the California Water Project Authority. This work, initiated by a directive of the state legislature, is concerned with the feasibility and economic value of salinity-control barriers in San Francisco Bay. A report of the investigation will be presented to the legislature in March 1955. Gordon L. Long, in a paper entitled "Geophysical considerations of salinity control barriers in San Francisco Bay," reported on the engineering studies for the investigation. He emphasized the delicate balance and complex interrelation of tides, streamflow, and sediments in the Bay and how these geophysical elements would effect the functional feasibility of a barrier. In a paper by Dean C. Muckel and Harry F. Blaney, studies were described of probable evaporation and evapotranspiration losses that would occur from free-water pools if salt-water barriers were constructed in San Francisco Bay. Based on climatological records and new measurements, annual and monthly estimates of evaporation from lake surfaces and of consumptive use by marsh vegetation were prepared for critical water-supply years.

The hydraulics of San Francisco Bay defy direct analytic solution, thereby requiring other approaches to the problem. "A proposed model study of San Francisco Bay" by John A. Stirton told of a proposed comprehensive hydraulic model to be constructed by the Corps of Engineers, U.S. Army, in an attempt to obtain solutions for numerous hydrographic, sediment, and navigation problems of the Bay. Prototype data needed for the construction, verification, and operation of the model were described. The final paper of the symposium was by Robert E. Glover, "A new method for predicting transient states of salinity intrusion into the Sacramento-San Joaquin Delta." A mathematical analysis indicated the flows required through the delta to hold salinities penetrating upstream from San Francisco Bay to specified amounts. Results compared favorably with data from independent studies.

In a session of the hydrology section, J. F. Poland and G. H. Davis presented "Subsidence of land surface in the Delano and Mendota-Huron areas, San Joaquin Valley, California." This paper told of subsidence that now exceeds 10 ft in two areas of the San Joaquin Valley. Annual rates vary between ½ and 1 ft/yr. Plots of subsidence against decline in artesian pressure suggest that the extensive ground-water pumpage in the areas is a major cause of the subsidence. Studies of organic, inorganic, and radioactive tracers were described by W. J. Kaufman and G. T. Orlob in "An evaluation of ground-water tracers." Using lysimeter columns containing three California soils, inherent weaknesses in certain radioactive isotopes were indicated because of soil adsorption. Also mentioned were field studies of a radioiodine tracer in a recharge well surrounded by observation wells. Other papers of the session dealt with the mechanics of overland flow, hydrology of the San Bernardino and Eastern San Gabriel mountains of California, geology and water quality relationships in two northern California areas, and spring sapping of certain submarine canyons of the California coast.

The session of the oceanography section featured a series of papers reporting extensive research on waves. C. L. Bretschneider described analyses of the generation of wind waves over a continental shelf, Osvald Sibul told of laboratory studies of wind tides in shallow water with varying bottom conditions, and M. Manohar reported on experimental and analytic work on the effect of wave action on bottom sediments. Other papers included a report on a model study of wave action on a cylindrical island by A. D. K. Laird and an investigation of wind-generated short-crested waves using a ripple tank by G. C. Ralls, Jr.

On the second day of the meeting a symposium on *Snow and Watershed Management* was held. Several aspects of the importance of snow in California were discussed. Fred A. Strauss described the dependence of California's water supply on the spring snowpack, while Walter J. Parsons pointed out the menace of

snow-melt floods. In an interesting paper, "Operation wet blanket: proposed research in snowpack management in California," Edward A. Colman stated that the accumulation and melt of snow may be partially controlled by employing proper forest planting and cutting. Emphasizing that work in other areas may not apply in California because of different weather and forest conditions, he proposed various field and pilot tests of forest lands for improved water yield as well as for timber production. As a corollary to the previous paper, Henry W. Anderson, in "Forest effects on snow-pack accumulation and melt, Central Sierra Snow Laboratory," indicated that snowpack accumulation and melt at a given point were related to the amount of forest shade and to the height and distance of the trees from the snow-measurement point.

DAVID K. TODD

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AAAS—Rosenthal Award for Cancer Research

The American Association for the Advancement of Science announces that, beginning this year, it will award annually the AAAS–Anne Frankel Rosenthal Memorial Award for Cancer Research. The award is supported by the Richard and Hinda Rosenthal Foundation and consists of $1000. It will be given once each year for at least 5 years for outstanding research by a scientist resident in the United States. In proposing the award, the foundation stated:

> We do not wish to exclude an outstanding advance on the more applied, or even clinical, level, but we do wish to make it quite clear that very basic pieces of research would surely qualify for primary consideration.

The board of directors of the Association has named Warren Weaver as chairman of the award committee and has invited the American Cancer Society, the National Cancer Institute, the Sloan-Kettering Institute, and the American Association for Cancer Research each to nominate one member of the committee. Richard L. Rosenthal, president of the Richard and Hinda Rosenthal Foundation, will also serve as a member of the committee. Each year this committee will nominate a recipient prior to the Association's annual meeting during the last week in December. The nomination will be formally submitted for approval by the board of directors of the Association and will be announced at the annual meeting.

The first award will be announced in December 1955 and will be for work that was completed or reported to the scientific world sometime during 1954 or 1955. Later awards will be for work completed or reported subsequent to the last previous work that received the prize.

The committee, using suggestions received from its own membership and from whatever proposals it may see fit to solicit, will consider only work that has been reasonably fully reported to the scientific community through the usual oral or printed channels, so that the work will have been subject to the usual processes of general scientific judgment regarding its validity and importance.

Science News

The **National Academy of Sciences** at its 92nd annual meeting in Washington, D.C., elected a home secretary, 3 members of the council, 30 members, and 4 foreign associates. Hugh L. Dryden, director of the National Advisory Committee for Aeronautics, Washington, D.C., was elected home secretary for a 4-year term, beginning 1 July. He succeeds Alexander Wetmore, research associate, Smithsonian Institution, Washington, D.C. Other officers of the academy, all of whom are members of the council, are pres., Detlev W. Bronk; v. pres., George W. Corner; foreign sec., John Gamble Kirkwood; treas., William J. Robbins.

E. A. Doisy of the St. Louis University School of Medicine, Theophilus S. Painter of the University of Texas, and James Gilluly of the U.S. Geological Survey, Denver, Colo., were elected to the council. Doisy and Painter will serve 3-year terms beginning 1 July, and Gilluly will complete Dryden's unexpired term which terminates 30 June 1956. Additional members of the council at the present time are Farrington Daniels, Robert F. Loeb, Wendell M. Stanley, Merle A. Tuve, and Edwin B. Wilson. Loeb and Stanley complete their terms on 30 June.

Newly elected members of the academy are as follows:

William Foxwell Albright, professor of Semitic languages, Johns Hopkins University.

Lawrence Rogers Blinks, professor of biology, Stanford University, and director, Hopkins Marine Station, Pacific Grove, Calif.

Richard Dagobert Brauer, professor of mathematics, Harvard University.

Harrison Scott Brown, professor of geochemistry, California Institute of Technology.

Robert Kyle Burns, staff member, Carnegie Institution of Washington, Baltimore, Md.

Subrahmanyan Chandrasekhar, professor of theoretical astrophysics, Yerkes Observatory, University of Chicago, Williams Bay, Wis.

John Chipman, professor of metallurgy, Massachusetts Institute of Technology.

Carleton Stevens Coon, curator of ethnology, University Museum, University of Pennsylvania.

Richard Courant, professor of mathematics and director, Institute of Mathematical Science, New York University.

Gilbert Dalldorf, director, Division of Laboratories and Research, New York State Department of Health, Albany.

Paul Hugh Emmett, senior fellow, Mellon Institute, Pittsburgh, Pa.

Ralph Waldo Gerard, professor of neurophysiology, Neuropsychiatric Institute, University of Illinois, Chicago.

Kurt Gödel, professor of mathematics, Institute for Advanced Study, Princeton, N.J.

Raymond George Herb, professor of physics, University of Wisconsin.

Johannes Holtfreter, professor of zoology, University of Rochester.

Marion King Hubbert, research geologist, Shell Oil Co., Houston, Tex.

Nelson Jordan Leonard, professor of chemistry, University of Illinois, Urbana.

Colin M. MacLeod, professor of microbiology, New York University College of Medicine.

Horace Winchell Magoun, professor of anatomy, University of California Medical Center, Los Angeles.

Deane Montgomery, professor of mathematics, Institute for Advanced Study, Princeton, N.J.

Philip McCord Morse, professor of physics, Massachusetts Institute of Technology.

John Robinson Pierce, director of electronics research, Bell Telephone Laboratories, Inc., Murray Hill, N.J.

Charles Phelps Smyth, professor of chemistry, Princeton University.

Esmond Emerson Snell, professor of chemistry, University of Texas.

Kenneth Wartinbee Spence, professor of psychology, State University of Iowa.

George Eugene Uhlenbeck, professor of theoretical physics, University of Michigan.

Robley Cook Williams, professor of biophysics and biophysicist to the Virus Laboratory, University of California, Berkeley.

David Wright Wilson, professor of physiological chemistry, School of Medicine, University of Pennsylvania.

Perry William Wilson, professor of bacteriology, University of Wisconsin.

Saul Winstein, professor of chemistry, University of California, Los Angeles.

The following new foreign associates were announced:

Max Born, formerly professor of physics at the University of Göttingen, now retired, Bad Pyrmont, Germany.

Bertil Lindblad, director, Stockholm Observatory, Stockholm, Sweden.

André Lwoff, head of the department of microbial physiology, Institut Pasteur, Paris, France.

Sir Alexander Todd, professor of chemistry, Cambridge University, Cambridge, England.

The seaweed kelp has furnished the basic material for synthesis of a new chemical to keep blood from clotting. The **new anticoagulant,** which is nonpoisonous in large doses and acts for the required length of time, is being developed at the Canadian National Research Council's Maritime Regional Laboratory in Halifax, N.S., Canada.

The success of the Salk vaccine has prompted President Eisenhower to suggest that the **first award for Distinguished Civilian Achievement** be made to Jonas Salk, developer of the vaccine.

On 22 Apr. Salk received from the President at the White House a presidential citation; the other award awaits Congressional approval. In this connection a Washington Post editorial says in part:

> It is a happy thought that the first of the proposed Awards for Distinguished Civilian Achievement should go to Dr. Jonas Salk, who has developed the polio vaccine. There is not likely to be any dissent from President Eisenhower's suggestion that Dr. Salk has earned this extraordinary recognition for the service he has rendered to mankind. Indeed, the indication that the President has Dr. Salk in mind as the first recipient of the award he asked Congress last January to create should hasten enactment of the necessary legislation. There is no good reason to confine high honors from the Government to the military field. An achievement such as Dr. Salk's may be even more important to the welfare of the people and to the life of the Nation than the winning of a battle. Congress cannot act too promptly in creating the award that the President wishes to confer.

Social isolation cannot be cited as a crucial, predisposing element in the development of **schizophrenia,** according to a study conducted by the Laboratory of Socio-Environmental Studies of the National Institute of Mental Health. The study, under the direction of John A. Clausen and Melvin L. Kohn, was concerned with the relationship between the effects of social isolation on an individual and the subsequent development of schizophrenia. It was carried out at Hagerstown, Md., over a 2-year period.

Although the investigators found a large amount of social isolation during adolescence among schizophrenics, isolation in itself did not appear to be the predisposing factor nor did it seem to intensify the severity of the disease. Isolation from other people appears to be important only after development of the abnormal personality is well advanced and the individual has already shown signs of a feeling of inadequacy in his dealings with other people.

In a study of 500 **inscribed rocks in the Negev,** the southern desert of Israel, Emmanuel Anati, archeologist with the Israel Department of Antiquities, and other scientists have distinguished 7 styles of art representing as many different eras. The most ancient has been tentatively assigned to the Stone Age. Anati's account of the petroglyphs is scheduled for publication in the spring issue of *Archaeology.* Almost all the desert regions—from Algeria in the west to Eastern Arabia and Mesopotamia in the east—bear traces of rock pictures, but the importance of the Negev finds lies in their continuity, which affords scholars a clear historical outline of the region. An accidental discovery of some ancient rock inscriptions by the Hebrew University's department of geography started Anati on a trail through the desert that culminated in his study.

Scientists at the U.S. Department of Agriculture have succeeded in immunizing chickens against the cancerous disease **visceral lymphomatosis,** also known as big-liver disease. Resistance to the disease was passed from vaccinated hens to their chicks through the eggs in experiments conducted at the Regional Poultry Research Laboratory, East Lansing, Mich. These results follow closely another development at the East Lansing laboratory, a diagnostic technique that may prove important in the identification of the visceral form of lymphomatosis.

To immunize the chicks, B. R. Burmester and associates vaccinated hens with a dilute preparation of the visceral-lymphomatosis virus made from diseased chicken livers. Burmester thinks that vaccination resulted in a buildup of protective antibodies; apparently these were passed through the eggs to the chicks. The East Lansing studies used White Leghorn hens of a highly susceptible strain. It has been estimated that lymphomatosis costs the poultry industry $50 million annually.

The Los Angeles County Museum has recently acquired the **Georg Statz collection of fossils** of the Tertiary of Germany. This collection consists of more than 6000 specimens, including approximately 700 types and illustrated specimens, in an excellent state of preservation. Insects predominate in the collection, but many plants, as well as a few vertebrates and fresh water shells, are included. The material, which was collected in Oligocene fresh water deposits near Rott, Germany, represents 30 years of diligent collecting and research undertaken by the late Georg Statz through the facilities of the University of Cologne. Statz previously exhibited the curated material in Berlin in 167 glass-topped cases. These cases are intact and have the original identification labels, drawings, and photographs systematically associated with the fossil specimens. After its preliminary presentation from 25 May to 26 June, the collection will be established in a permanent exhibit.

The council of the **European Organization for Nuclear Research** (CERN) has passed the following resolution concerning its membership policy:

> According to Article III of the Convention, States not yet members of the Organization can apply for membership. During the period of the building up of the Organization the Council considers it advisable to defer action on such applications until January 1957. However, the Council authorizes the Director-General to accept, prior to that date, subject to approval by Council and on appropriate terms, suitable research workers from non-Member Countries as collaborators in the work of CERN.

One of the last gaps in the midde of the list of radioactive forms of common metals has been filled by the identification of manganese 53. Found in a sample of chromium bombarded by protons, the necessary timing studies to establish the half-life of 140 years for the **new isotope** were carried on by Joseph R. Wilkinson of Florida State University, Tallahassee, who is working with Raymond K. Sheline, associate professor of chemistry.

More than 2½ years have been spent measuring the half-life. Theory had predicted a long-lived form of manganese for this particular place in the list of isotopes; in their work, Wilkinson and Sheline had to make certain that no short-lived radioactivity was present in the irradiated sample to confuse the results. The new isotope could be used to follow changes in iron that contains manganese, changes resulting from wear or from shifts in crystalline structure caused by age.

Mervin Moskowitz of Purdue University has described in the 2 Apr. issue of *Nature* a potential **new danger in blood transfusions** if a way is found to keep blood for 2 or 3 mo longer than is now possible. Red blood cells that have been preserved are changed so that they will sensitize a person to his own stored red cells.

During the recent annual meeting of the American Association of Anatomists at Jefferson Medical College, B. Vincent Hall of the University of Illinois confirmed a long-discredited description of the important blood vessels in the kidney. He exhibited photographic evidence that the specialized **capillaries of the kidney** are exactly as described and sketched 100 years ago by William Bowman, the great English physician. Studies of the glomerulus showed branching networks that resemble the capillaries that are elsewhere in the body instead of the simple loop formations more recently assumed.

Scientists in the News

The National Academy of Sciences presented the following awards during its 92nd annual meeting which took place 25–27 Apr. in Washington, D.C.

The Alexander Agassiz medal, established to honor outstanding contributors to the science of oceanography throughout the world, was awarded to **W. Maurice Ewing,** director of the Lamont Geological Observatory and professor of geology at Columbia University, for his work in marine geophysics. Ewing, who is a member of the academy, worked during the war on underwater explosives as well as on the development of a system of long-range underwater sound transmission. Recently he has made particularly important contributions to knowledge of the structure of the floor of the Atlantic Ocean and the continental shelf; his underwater photographic techniques have greatly increased knowledge of conditions on the ocean floor in deep water.

The Elliot medal, awarded for the most meritorious work published each year in zoology or paleontology, was presented to **Libbie H. Hyman,** research associate at the American Museum of Natural History, New York. Hyman's work cited in the award was published in two volumes that appeared in 1951 as parts of a comprehensive treatise, *The Invertebrates.* These volumes are of major importance not only to those

in the technical zoological field, but also to teachers and to research workers concerned with medical matters, especially because many of the organisms treated are parasitic on other animals, including man. Hyman is the first woman to receive this award since it was established in 1917, and she is the second woman to be honored by the academy through presentation of one of its medals.

The J. Lawrence Smith medal was awarded for "fruitful research in meteoric bodies" to **Peter Mackenzie Millman,** head of the section on upper-atmosphere research of the Division of Radio and Electrical Engineering, National Research Council of Canada. Millman pioneered in the application of radar detection techniques to observation of meteor showers, making possible continuous registration of the number and velocity of meteors entering the upper atmosphere regardless of weather or daylight, and including those too small to be observed visually. Millman's earlier work on the spectra of incandescent meteors contributed much to knowledge of the earth's atmosphere.

The Kimber Genetics award, presented for the first time this year, has been established by the Kimber Farms Foundation of Niles, Calif., to recognize distinguished scientific contributions in genetics, either through single accomplishments of unusual significance or through a long period of significant productivity. Two awards were made: to **William E. Castle,** emeritus professor of genetics at Harvard University and now research consultant to the University of California, and to **Hermann J. Muller,** professor of zoology at Indiana University. Both men are members of the academy.

Castle, who is 87, is regarded as the founder of mammalian genetics in the United States. Near the turn of the century his research showed decisively the role of genes as the mechanisms by which inherited characteristics are transmitted. His long career has been unusually fruitful, both as a teacher of the leading mammalian geneticists in the United States today and as a contributor to the science of genetics. Castle was presented the award *in absentia.*

Among Muller's most important contributions have been his studies of the genetic effects of radiations. His work has shed much light on the structure and function of the chromosomes. Muller was awarded the Nobel prize in physiology and medicine in 1946 in recognition of his research.

The Kimber award is made by the National Academy of Sciences upon recommendation of a selection committee that includes three members named by the academy, one named by the Genetics Society of America, and one named by the AAAS.

On 1 May **Brig. Gen. K. E. Fields,** succeeded Maj. Gen. K. D. Nichols, USA (ret.), as general manager of the Atomic Energy Commission. For the past 10 years, with the exception of 2 years on other tours of duty, Fields has been associated with the U.S. atomic energy program.

George W. Rawson has announced his retirement from the research department of Ciba Pharamaceutical Products, Inc., Summit, N.J. After completing his early education in England, his native land, he emigrated to the United States. He graduated in 1916 from the U.S. College of Veterinary Surgeons, Washington, D.C., and then established a general veterinary practice in Fredericksburg, Va. Next he served briefly as a veterinary inspector for the U.S. Bureau of Animal Husbandry. This work was interrupted by 18 mo of war service as an officer in Veterinary Reserve Corps of the U.S. Army, after which he returned to his previous employment. He was stationed in Norfolk, Va., where he specialized in hog cholera, and later he was transferred to Louisiana to help with the control of Texas fever ticks. Then he resigned from Government service to accept appointment as veterinary inspector for the Virginia State Livestock Sanitary Board, in which position he directed his attention to the eradication of bovine tuberculosis.

In 1922 Rawson decided to do some postgraduate work at the School of Hygiene and Public Health, Johns Hopkins University. The following year he joined Parke, Davis and Co., Detroit, Mich., where he served for 23 yr, first as assistant manager in the animal husbandry department and then as head of parasitology in the research department. At Ciba he has spent 6 yr as director of veterinary clinical research and 9 yr (inclusive) as director of parasitology, research department. In the course of his career Rawson has published some 35 technical papers, chiefly on taxonomic and medical entomology, veterinary science, and parasitology. By avocation, he has always been a naturalist, an interest he now hopes to be able to develop more fully.

Karl Spencer Lashley, who first demonstrated a measurable relationship between brain mass and learning ability, will retire this summer as research professor of neuropsychology at Harvard University. Since 1942 Lashley has been director of the Yerkes Laboratories of Primate Biology at Orange Park, Fla., which is operated as a research center under joint sponsorship of Harvard and Yale universities. Lashley's basic interest has been in the neurological and physiological mechanisms that underlie behavior, and his theoretical consideration of the nature of consciousness in relation to the brain and behavior has influenced a generation of psychologists. His demonstration of the relationship of brain mass and learning is regarded as a turning point in modern physiological psychology.

At the Yerkes Laboratories Lashley has directed studies of brain function and structure. This research has included analyses of the sensory connections of the brain and of the microscopic structure of the cerebral cortex. A number of investigations of the "associative areas" that lie between the sensory and motor regions of the cerebral cortex have disproved the theory that these are the "storehouses of memories"

and have shown that, within such areas, any part can carry out the functions of the whole, although at a lower level of efficiency. Other projects have dealt with the function of the long nerve tracts connecting different parts of the cortex, with the effects of different types of cerebral injuries, and with the course and nature of recovery from brain injuries.

Lashley was born at Davis, W. Va., in 1890. He received his A.B. degree in zoology from West Virginia University in 1910; the M.S. in bacteriology at the University of Pittsburgh in 1911; and the Ph.D. in genetics from Johns Hopkins University in 1914. He spent the three following years in postdoctoral study at Johns Hopkins as Bruce fellow in zoology and Johnston scholar in psychology. Lashley started his professional career in 1917 as instructor in psychology at the University of Minnesota, where he was promoted to professor in 1924. In 1920–21 he served as investigator under the U.S. Interdepartmental Social Hygiene Board, carrying out one of the first studies of the educational value of motion pictures. In the summers of 1925 and 1926 he was acting professor of psychology at the University of Chicago and at Columbia University. From 1927 to 1929 he was research psychologist with the Behavior Research Fund of the Institute for Juvenile Research in Chicago. He was then appointed professor of psychology at the University of Chicago, serving until 1935, when he joined the Harvard faculty as professor of psychology; he was named research professor of neuropsychology in 1937.

Among the honors awarded Lashley have been the Howard Crosby Warren medal of the Society of Experimental Psychology, 1937; the Daniel Giraud Elliott medal of the National Academy of Sciences, 1943; and the William Baly medal, Royal College of Physicians, 1953. His memberships include the National Academy of Sciences, the American Philosophical Society, and the American Academy of Arts and Sciences. He has served as president of both the American Psychological Association and the Society of American Naturalists, and he is an honorary member of the New York Academy of Sciences, the British Association for the Study of Animal Behavior, and the American Neurological Association. He is also a foreign member of the British Psychological Association and of the Royal Society of London.

Lashley has served as associate editor of the *Journal of Genetic Psychology, Genetic Psychology Monographs, Journal of Psychology, Acta Psychologica, Journal of Comparative and Physiological Psychology, Quarterly Review of Biology,* and *Journal of the Philosophy of Science.* He is the author of *Brain Mechanisms and Intelligence* and of more than 100 monographs and major articles.

Marshall G. Holloway, a physicist at Los Alamos Scientific Laboratory since 1943, has been appointed director of the Lincoln Laboratory of Massachusetts Institute of Technology. This laboratory, which is concerned with problems of continental defense, is managed by M.I.T. for the Army, Navy, and Air Force. Holloway assumes his new duties this month, succeeding **Albert G. Hill,** who has asked to be relieved of the director's responsibilities to permit him to return to his position as a professor in the department of physics at the institute.

At the spring alumni reunion dinner of the Philadelphia College of Pharmacy and Science on 21 May, two graduates of the institution will receive alumni awards: **E. Fullerton Cook,** professor emeritus of operative pharmacy at the college and senior editor of *Remington's Practice of Pharmacy*; and **Eli Lilly,** chairman of the board of Eli Lilly and Co., Indianapolis, Ind.

Rear Admiral Hyman G. Rickover, pioneer in the development of the nuclear-powered submarine U.S.S. *Nautilus,* has received the 1955 Egleston medal, Columbia University's highest alumni award for "distinguished engineering achievement."

Ruben F. Mettler, electrical engineer and former special consultant to the Department of Defense, has joined the Ramo-Wooldridge Corp., Los Angeles, Calif. Mettler, whose experience also includes 6 years with Hughes Aircraft Research and Development Laboratories, will occupy a position in the guided missile and electronic systems activities of Ramo-Wooldridge.

New trustees of Biological Abstracts, Inc., are **William H. Cook** of the National Research Council of Canada and **Hiram J. Evans** of Syracuse University.

Robert B. Curry, specialist in finance and administration in research and assistant director of the Applied Physics Laboratory of Johns Hopkins University, Silver Spring, Md., has resigned to take a position as assistant comptroller of the Southern Railway System. Curry, whose office will be in Washington, D.C., will continue to be a consultant to the laboratory. He joined the Hopkins unit in 1946, and was responsible for planning the entire fiscal program for erection of its new $2 million building.

John F. Haines, formerly vice president and chief engineer of the McCauley Industrial Corp. of Dayton, Ohio, has joined the American Locomotive Co. in Schenectady as chief development engineer, atomic products.

Philip B. Price, professor and chairman of the department of surgery at the University of Utah, has been appointed acting dean of the College of Medicine. He will fill the post left vacant by John Z. Bowers who will assume the deanship at the University of Wisconsin Medical School.

Three visiting mathematicians will be in residence at the University of Chicago for the mathematics department's summer program: **H. L. Hamburger** of the University of Cologne; **John Wermer** of Brown University; and **George W. Mackey** of Harvard Univer-

sity. **Alexander Grothendieck** of the University of Kansas will also be present for the first part of the summer.

The following appointments to assistant professor, effective 1 July, have been announced by Massachusetts Institute of Technology: **Carl W. Garland,** chemistry; **Frederick D. Greene, II,** chemistry; **Herbert O. House,** chemistry; **Norman A. Nelson,** chemistry; **John S. Waugh,** chemistry; **John F. Twigg,** graphics; **Earle H. Watts,** graphics; **Robert E. Ogilvie,** metallurgy; **John G. King,** physics.

Carl J. Holcomb, formerly in charge of forest management research at the Mountain State Research Center in Elkins, W. V., a branch of the Northeastern Forest Experiment Station, U.S. Forest Service, has recently been appointed state extension forester of Virginia, with headquarters at Blacksburg.

Stanley S. Wedberg, associate professor of bacteriology at the University of Connecticut, will succeed **Walter L. Kulp** as head of the university's bacteriology department on the latter's retirement next fall. Wedberg is the author of a textbook in basic microbiology and of a number of articles on insect microbiology.

Meetings

Two **seminars on the teaching of preventive medicine** are being organized by the Pan American Sanitary Bureau, Regional Office of the World Health Organization, to include participation by all the 75 medical schools in Latin America. With the current trend of increasing emphasis on prevention, medical and school authorities feel strongly the need for improvement and strengthening of the teaching of preventive medicine in the Americas. The decision to hold the seminars has been stimulated by proposals that have come to the bureau from a number of the medical schools in Latin America. The general purpose of the seminars is to promote the interchange of ideas and experience among deans and professors of preventive medicine in the training of doctors.

The first seminar, planned for the end of August 1955, will include medical-school representatives from Argentina, Bolivia, Brazil, Chile, Paraguay, Peru, Uruguay, and Venezuela. The second, to be held early in 1956, will include representatives from Colombia, Cuba, Dominican Republic, Equador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, and Panama.

In addition to the regular staff of the bureau, two special consultants have been appointed to assist in the preparation of the seminars and to participate in them. The consultants are Abraham Horwitz, subdirector of the National Health Service of Chile and director, on leave of absence, of the School of Public Health of the University of Chile; and Guillermo Arbona, professor and head of the department of preventive medicine in the University of San Juan, Puerto Rico. Horwitz is now visiting the leading schools of medicine in South America to discuss plans for the first seminar. Later in the year Arbona will visit the medical schools in the countries invited to attend the second seminar.

The seminars will be organized in small groups, and there will be no presentation of formal papers. The subjects to be discussed are (i) program and methods of teaching preventive medicine; (ii) organization of the department of preventive medicine—the formation and functions of the faculty; (iii) relationships with other departments of the school of medicine; and (iv) role of the department of preventive medicine in the activities of public health services, and vice-versa.

The 1955 **National Telemetering Conference** will be held 18–20 May in the Morrison Hotel, Chicago. Sponsors are the American Institute of Electrical Engineers, the Institute of Aeronautical Sciences, the Institute of Radio Engineers and the Instrument Society of America. Sessions are scheduled on industrial telemetering, pickups and transducers, flight testing, multiplex techniques, new developments in telemetry, and remote controls and data processing.

At the annual banquet Hugh L. Dryden, director of the National Advisory Committee on Aeronautics, will speak on "Problems in ultra high speed flight." A luncheon talk will be delivered by William A. Wildhack of the National Bureau of Standards. Conrad H. Hoeppner, of Stavid Engineering, Inc., Plainfield, N.J., is the program chairman, and Gilbert H. Brittain, of Armour Research Foundation, Chicago, is the chairman of exhibits.

A Symposium on Reproduction and Infertility, sponsored jointly by the Michigan State College School of Veterinary Medicine and the Michigan Agricultural Experiment Station, will be held at the Kellogg Center for Continuing Education on the college campus, 27–29 June. Major objectives of the symposium will be the review and evaluation of recent progress in the field of reproduction, together with discussion of problems requiring further study.

The first day's session will be devoted to problems of diagnosis of reproductive diseases and a survey of progress in the specific disease areas of vibriosis, leptospirosis, trichomoniasis, and brucellosis. On the second day a series of five lectures will be presented on various aspects of the physiology and anatomy of male and female reproductive processes; in the evening a panel discussion will be held on ova transplantation. The final session will be devoted to papers on the endocrine control of reproduction in the male. The program has been scheduled to allow ample time for questions and discussion after each formal paper.

This is one of ten academic symposiums to be held at Michigan State College in observance of its centennial. Arrangements have been made at the Kellogg Center for lodging and meals for out-of-town guests. Printed programs will be available about 15 May. They may be obtained by writing to E. P. Reineke, Symposium Chairman, Dept. of Physiology and Pharmacology, Michigan State College.

A conference on **The Computing Laboratory in the University** will be held at the University of Wisconsin 17–19 Aug. Specialists in all of the research fields in which the electronic computer can be used will discuss applications of computing equipment. The conference is designed primarily to assess the value of the existing university programs as aids to schools and organizations planning to install numerical analysis laboratories. It will be of interest to educational administrators and to persons in government and industry who are concerned with the use of trained mathematicians in the computing field.

Preston C. Hammer, who heads Wisconsin's computing laboratory, is chairman of conference arrangements. The keynote address will be presented by Conrad A. Elvehjem, dean of the university's graduate school. Other participants are John H. Curtiss, executive director of the American Mathematics Society; Jay W. Forrester, chief of the Digital Computing Laboratory at Massachusetts Institute of Technology; and Philip Thompson, major, USAF, head of the numerical weather prediction unit of the Department of Defense.

Panel discussions and leaders will be as follows: "Future demand for educated personnel," E. K. Ritter of the Naval Proving Grounds Computing Laboratory, Dahlgren, Va.; "Curricular needs," C. W. Adams of the Digital Computing Laboratory, M.I.T.; "Equipping a laboratory," J. W. Carr, III, of the Engineering Research Institute at the University of Michigan; and "Organization and financing of university laboratories," P. Nash of the digital computer laboratory at the University of Illinois. Many other participants will give short talks on special applications of the numerical analysis equipment with which they are most familiar.

Society Elections

South Carolina Academy of Science: pres., G. M. Armstrong, Clemson College; v. pres., I. S. H. Metcalf, The Citadel; sec.-treas., Harry W. Freeman, University of South Carolina; editor, Roberta Lovelace, University of South Carolina; curator, Willard A. Whitesell, University of South Carolina. Councilors are Louis G. Williams, Furman University; T. D. Brown, Erskine College; and W. R. Leonard, Wofford College. The representative to the AAAS Council is Martin D. Young, U.S. Public Health Service, P. O. Box 717, Columbia, S.C.

American Oil Chemists' Society: pres., W. A. Peterson, Colgate-Palmolive Co., Jersey City, N.J.; v. pres., T. H. Hopper, Southern Regional Research Laboratory, USDA, New Orleans, La.; sec., R. W. Bates, Armour and Co., Chicago; treas., A. F. Kapecki, Wurster and Sanger Inc., of Chicago.

American Institute of Mining and Metallurgical Engineers: pres., H. DeWitt Smith, Newmont Mining Corp., New York; sec., E. O. Kirkendall, A.I.M.E., 29 W. 39 St., New York 18; treas., Gail F. Moulton, Rockefeller Bros. The vice presidents are T. B. Counselman, Behre, Dolbear and Co.; Walter A. Dean, Alcoa; Harold Decker, Houston Oil Co. of Texas; Lloyd E. Elkins, Stanolind Oil and Gas Co.; A. B. Kinzel, Union Carbide and Carbon Corp.; and W. W. Mein, Jr., Calaveras Cement Co. Representatives to the AAAS Council are O. B. J. Fraser, International Nickel Co., and James T. MacKenzie, American Cast Iron Pipe Co.

Aero Medical Association: pres., Kenneth E. Dowd, Trans-Canada Air Lines, Montreal; pres.-elect, Jan H. Tillisch, Mayo Foundation, University of Minnesota, and Northwest Airlines; sec.-treas., Thomas H. Sutherland, Marion, Ohio; editor of *Journal of Aviation Medicine,* Robert J. Benford. The first vice president, to become president-elect next year, is Capt. Ashton Graybiel, U.S. Naval School of Aviation Medicine, Pensacola, Fla. The other vice presidents are Eldridge S. Adams, Los Angeles, Calif.; Lieut. Col. Arne B. Frykholm, Stockholm, Sweden; Grp. Capt. Tragool Thavaravej, Bangkok, Thailand; and A. Buchanan Barbour, London, England.

Education

The New York University School of Education will inaugurate an **internship program for graduate nurses** with the beginning of the 1955 summer session on 5 July. Financed through Sloan Foundation grants, the program offers specialized study leading to either a baccalaureate or master's degree. A limited number of tuition scholarships will be available. All students will be granted a monthly stipend comparable to a staff nurse's salary. Subjects of study will include advanced clinical nursing in medicine, surgery, cancer, chemotherapy, rehabilitation, and principles of team nursing.

Colgate University, Hamilton, N.Y., has accepted an invitation to become affiliated with the Columbia University School of Engineering in the "combined plan for a liberal education in engineering." Colgate thus becomes the 44th private liberal arts college to become affiliated with the Columbia engineering school. Under this program, a student attends Colgate for 3 years and Columbia for 2 years, receiving degrees from both institutions. A "combined plan" student will receive an A.B. degree from Colgate and a B.S. degree in engineering from Columbia. Paul Ray Gleason, professor of physics at Colgate, has been appointed liaison officer and advisor for combined plan students there. Frank H. Lee of Columbia is chairman of the Combined Plan Committee.

A program for teaching law students the **relationship of psychiatry to modern legal problems** will be developed by the University of Pennsylvania Law School under an $89,640 Federal grant. The purpose of the 3-year project, which will begin 1 July, is to train law students in the behavioral sciences with specific attention to the development of teaching methods and

materials in the area of law and psychiatry. In addition, the project has four interrelated goals: (i) to improve communication between psychiatrists and lawyers and evolve effective teaching techniques through their academic collaboration; (ii) to compile and publish a coursebook and teacher's guide so that the results may be available to all law schools; (iii) to train the individual participants in the project, including the legal and psychiatric codirectors and their research associates; (iv) to accelerate the reception into law of further advances in psychiatry as they occur in the future.

An educational program that will enable college graduates to earn a doctorate in nuclear power while receiving regular industry-scale salaries through on-the-job training has been announced jointly by the Westinghouse Electric Corp. and the **University of Pittsburgh.** This is thought to be the first such program to be inaugurated in industry; it was arranged by A. C. Monteith, Westinghouse vice president in charge of engineering, and R. H. Fitzgerald, chancellor of the university. The plan will enable college graduates to spend part of their time studying at the University of Pittsburgh and part at the Bettis atomic power development laboratory in Pittsburgh. This laboratory is operated by Westinghouse for the Atomic Energy Commission.

Following the initial college-industry phase, graduates will become eligible for an educational leave. They will then return full-time to the university, on a tuition-paid basis, to complete work toward their doctorate. Tuition expenses will be reimbursed throughout the program, and while on educational leave, each graduate will receive a cost-of-living allowance that will take into account the number of his dependents. Salary increases will be granted, based upon on-the-job performance, just as to other Westinghouse employes.

A new radioactive cobalt-60 source, the most potent source of artificially produced nuclear radiation for cancer treatment yet made, has been installed in the **Argonne Cancer Research Hospital's** rotating therapy unit at the **University of Chicago.** The new source—a cylinder of cobalt ⅓ in. in diameter and 1 1/10 in. long—possesses a total radiation energy of 1225 c, which makes it one of the two or three most energetic sources in use in the United States.

The small size of the new source, particularly its small diameter, makes it possible to direct an x-ray beam into a tumor more accurately than heretofore. The new source delivers a dose of 23 r/min of gamma rays at a distance of a little over 30 in. A conventional 250,000 volt x-ray machine delivers a dose of about 30 r/min at a comparable distance under ordinary circumstances.

The establishment of a Library of Catholic Medical History at the **Georgetown University Medical Center,** Washington, D.C., has been announced. The library will serve as a repository for material describing the advances made by Catholics and Catholic institutions in the field of medicine. To initiate the project, the Raskob Foundation for Catholic Activities has awarded a $5000 grant that is to provide for the purchase, collection, and maintenance of manuscripts and books.

The director of the library will be Andrew A. Marchetti of Georgetown's faculty, and curator of the collection will be Margaret C. O'Byrne, Georgetown medical-dental school librarian. An appeal is made to Catholic doctors throughout the United States to send reprints of their scientific contributions to the library, and to biographers of the great physicians of the past to make their data available to Georgetown.

Grants, Fellowships, and Awards

The Medical Library Association will give two $150 scholarships to qualified students enrolled in the advanced **medical literature** and reference-work course that is being offered at the University of Illinois Library School, Urbana, 20 June–16 July. The last 3 days of the course will be devoted to practice in the Quine Library of Medical Sciences at the university's professional campus in Chicago.

Application for the scholarships should be made to the school at the time of application for enrollment in the course. These scholarships, the first to be given in the Midwest, have been offered previously at Emory University, Columbia University, and the University of Southern California. Applications for the scholarships *must be received by the Library School before 25 May.*

A new postdoctoral research fellowship program relating to multiple sclerosis and the other demyelinating diseases has been announced by the **National Multiple Sclerosis Society.** This program was made possible by an initial anonymous contribution of $102,000 to encourage qualified young scientists to devote themselves to research to find the cause, cure, and prevention of multiple sclerosis and related diseases.

Successful candidates will be designated as either fellows or scholars. Fellowships will be awarded to qualified candidates holding a doctorate in medicine or in related fields; they afford a basic stipend of $4000 to $5000 per year based upon the academic and professional training of the applicant and upon his family dependency status.

Appointment as a scholar will be made to an investigator holding a doctorate in medicine or a related field who has demonstrated competence in biological research. This award will provide a stipend of $6000 to $8000 per year based upon the academic record, professional training, and research attainments and interests of the applicant.

These awards will be made for 1 calendar year and may start any time within 8 mo of the date of notification of the award. One or two additional years of support may be requested; however, total tenure is not

expected to exceed 3 years. In all cases additional years of support are dependent upon the terms of the original award and upon continued endorsement by the sponsor.

Research fellows and scholars may work at any institution qualified to provide appropriate training. It is the responsibility of the applicant to make all necessary arrangements for the conduct of his proposed program, both with his prospective sponsor and the institution. Applications may be secured by writing to: Dr. Harold R. Wainerdi, Medical Director, National Multiple Sclerosis Society, 270 Park Ave., New York 17, N.Y.

The **Fund for the Advancement of Education** has announced the granting of 138 1-year fellowships to college and university faculty members. Aggregating approximately $800,000, these grants are the fifth and final series of annual awards given by the fund primarily to enable the recipients to become better teachers in their respective fields, which include the humanities, the social sciences, and the natural sciences. The awards have been made upon recommendation by the fund's National Committee on Faculty Fellowships, under the chairmanship of president Oliver C. Carmichael of the University of Alabama. Winners for the coming year were chosen from 700 applicants, and represent 99 institutions throughout the United States.

The **Robert Roesler de Villiers Foundation,** established specifically to encourage research on leukemia, will award grants-in-aid of not more than $1000 each to qualified investigators who apply to the Robert Roesler de Villiers Foundation, Inc., 1172 Park Ave., New York 28. *The closing date for application is 1 Aug.*

The **Rockefeller Foundation** has given the University of Wisconsin $250,000 to support a 4-year research program on methods to trap and directly utilize the energy of sunlight. The research program will be conducted at the university under the direction of Farrington Daniels, solar energy expert and chairman of the university's chemistry department. John A. Duffie of the College of Engineering will have charge of the administration and coordination of the university's present solar energy research program, which will also benefit from the grant.

In outlining the new program, Daniels pointed out that there is little chance in the near future of solar energy competing with coal, petroleum, and electricity in the industrialized nations, but that there is a good chance of its competing now with animal power and human labor. He added that the situation calls for a new research approach, with emphasis on low-cost equipment and simplicity, and that the development of cheap plastics is offering new hope for the economical use of sunlight. Sunlight is so diffuse and of such low intensity, Daniels explained, that large areas have to be used to collect sufficient heat to be useful. An area of ground can be covered with light-weight and easily transported plastic collectors and containers at only a fraction of the cost required for glass, metals, concrete, and other materials.

In the Rockefeller-financed research at Wisconsin, emphasis will be placed on the development of solar-energy collectors, solar cookers, solar distillation of salt water, solar-operated refrigerators, solar engines and irrigation pumps, and other means and methods of using solar energy; attention will also be given to problems of solar radiation measurement. A minor part of the program will be devoted to long-range studies of photochemistry, photosynthesis, photoelectricity and the storage of electrical energy.

Miscellaneous

The Society for American Archaeology has announced the appointment on 1 May of Raymond H. Thompson of the department of anthropology at the University of Kentucky as associate editor for book reviews. It is requested that henceforward all publications submitted for review in ***American Antiquity*** be sent to Dr. Thompson.

Release to open file of a report on **Photogeologic procedures in geologic interpretation and mapping** has been announced by the Department of the Interior. The report briefly describes numerous photogeologic procedures with regard to annotation of geologic data, determination of quantitative geologic data, limited base-map compilation, and transfer of geologic data to base maps. It has been placed on file for public inspection in the Geological Survey library, room 1033, General Services Administration Building, Washington, D.C.

In expanding its search for innovations that might lead to increased progress in the development of **Air Force weapons,** the Air Research and Development Command's Analysis and Evaluation Office has appointed M. W. Beardsley, Lt. Col., as assistant for innovations. His duties are to receive and study ideas from industry, universities, and private individuals engaged in research work. The ARDC hopes thus to reduce the time lag between the conception of a basic idea and its adoption by the Air Force. Causes of delays in the past have been an absence of communication between the innovator and the ultimate user, the user's inability to realize the potential of a new idea, and the high cost of preparing a proposal to the Air Force when no definite military requirement existed.

Proposals submitted to ARDC should describe the innovation, give estimates of expected performance, and explain the innovation's potential value to the Air Force. All proposals will be evaluated by ARDC experts in the branch of technology concerned. Correspondence should be addressed to the Assistant for Innovations, RDTE, Headquarters, Air Research & Development Command, Box 1395, Baltimore 3, Md. Contractors having established relations with ARDC laboratories or offices should follow their customary procedure for submitting new ideas.