

Bliss, the Johns Hopkins University School of Medicine; Père Arthème Dutilly, missionary-scientist of the Oblate Missions and the Catholic University of America; Dr. Edwin G. Conklin, president, American Philosophical Society, and also president of Science Service; Dr. H. L. Dryden, president, Institute of the Aeronautical Sciences, and Dr. Marshall H. Stone, president, American Mathematical Society.

The Science Talent Search is conducted annually by the Science Clubs of America, sponsored by Science Service, and the Westinghouse Electric and Manufacturing Company. The Westinghouse Company provides the scholarships as an inspiration to scientific achievement in America.

The eight young scholars who received \$400 Westinghouse Science Scholarships were: Charles Poultney Perot, 17, Lancaster, Pa.; Thomas Richard Quermann, 17, Clarksburg, W. Va.; Josiah Macy, Jr., 17, Warrenton, Va.; Donald Rosswell Harris, 17, Johnstown, Pa.; William Weidman Piper, 17, Columbus, Ohio; Henry Hiram Kohl, 16, Newburgh, N. Y.; Elizabeth Ann Lean, 17, Shorewood, Wis.; and Virginia Ellen March, 16, Madison, Wis.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE election of officers for 1943 was delayed because of cancellation of the New York meeting. By a mail ballot of the council, a procedure that is valid under the constitution of the association, the following were elected. It was necessary to take a second ballot for president, since no person received a majority vote.

VICE-PRESIDENTS OF SECTIONS

Mathematics (Section A): F. D. Murnaghan, the Johns Hopkins University.

Physics (Section B): J. W. Beams, the University of Virginia.

Chemistry (Section C): Arthur J. Hill, Yale University.

Astronomy (Section D): Otto Struve, Yerkes Observatory.

Geology and Geography (Section E): John K. Wright, American Geographical Society.

Zoological Sciences (Section F): Carl R. Moore, the University of Chicago.

Botanical Sciences (Section G): W. J. Robbins, the New York Botanical Garden.

Anthropology (Section H): Robert H. Lowie, the University of California.

Psychology (Section I): Herbert Woodrow, the University of Illinois.

Social and Economic Sciences (Section K): F. Stuart Chapin, the University of Minnesota.

Historical and Philological Sciences (Section L): Henry E. Sigerist, the Johns Hopkins University.

Engineering (Section M): Thorndike Saville, New York University.

Medical Sciences (Section N): Paul D. Lamson, Vanderbilt University.

Agriculture (Section O): R. E. Buchanan, Iowa State College.

Education (Section Q): Harold F. Clark, Columbia University.

MEMBERS OF THE EXECUTIVE COMMITTEE

J. McKeen Cattell, editor of SCIENCE, Lancaster, Pa.

Burton E. Livingston, professor emeritus, the Johns Hopkins University.

Kirtley F. Mather, Harvard University.

ELECTED MEMBERS OF THE COUNCIL

Lawrence K. Frank, National Resources Planning Board, Washington, D. C.

Paul C. Kitchin, the Ohio State University.

In accordance with the constitution, the following section committeemen were elected by the respective sections for a four-year term expiring at the close of the meeting of December-January, 1946-1947:

Mathematics: G. Baley Price, University of Kansas.

Physics: Elmer Hutchisson, 35 W. 57th St., New York, N. Y.

Chemistry: R. M. Burns, Bell Telephone Laboratories.

Astronomy: Jason J. Nassau, Case School of Applied Science.

Geology and Geography: Ralph H. Brown, University of Minnesota.

Zoological Sciences: Clarence L. Turner, Northwestern University.

Botanical Sciences: Walter F. Loehwing, University of Iowa.

Anthropology: Julian H. Steward, Bureau of American Ethnology, Smithsonian Institution.

Psychology: H. E. Burt, the Ohio State University.

Social and Economic Sciences: Frederick F. Stephan, War Manpower Commission, Washington, D. C.

Historical and Philological Sciences: Conway Zirkle, University of Pennsylvania.

Medical Sciences: Dallas B. Phemister, University of Chicago.

Agriculture: Emil Truog, University of Wisconsin.

Education: Edward S. Evenden, Columbia University.

SCIENTIFIC NOTES AND NEWS

THE Vaughan Research Award in Horticulture for the best paper presented before the American Society for Horticultural Science and published in its *Proceedings* in 1942 has been made in the field of vege-

table crops to Dr. O. A. Lorenz and Dr. J. E. Knott, of the University of California at Davis, for their paper entitled "Studies of Graywall of Tomato," which appeared in Volume 40. This award of \$500

is made through the generosity of Leonard H. Vaughan, of the Vaughan Seed Stores, Chicago. Preference is given to papers that present new discoveries and which show promise of commercial importance in practical application.

THE managers of the Royal Institution have awarded the Actonian Prize of 100 guineas for the year 1942 to Dr. Alexander W. G. Ewing and Mrs. Ewing for their investigation concerning deafness and hearing aids.

THE Council of the British Geological Society announces the following awards: The Wollaston Medal to Professor A. E. Fersman; the Murchison Medal to Professor A. Brammall; the Lyell Medal to D. N. Wadia, lately of the Geological Survey of India; the Bigsby Medal to Dr. G. M. Lees, chief geologist of the Anglo-Iranian Oil Company; the Wollaston Fund to Miss Ethel D. Currie; the Murchison Fund to A. G. Davis; one moiety of the Lyell Fund to F. A. Bannister and another moiety to M. H. Hey.

AT a recent meeting of the Council of the Society of Chemical Industry, London, the award of honorary membership was conferred on Dr. Harold Hibbert, E. B. Eddy professor of industrial and cellulose chemistry at McGill University. In his absence the scroll was received in his behalf by the Canadian High Commissioner, the Right Honorable Vincent Massey. In making the award the president said that "the council in deciding to bestow this honor selected with great care one they considered worthy, for his career illustrates to a remarkable degree the great influence which a man of high scientific attainments can exert on industry and on the well-being of the community."

DR. JOSEPH L. WILLIAMS, associate professor of biology and chemistry at Lincoln University, Pennsylvania, has been elected a fellow of the Royal Entomological Society of London.

R. V. SOUTHWELL, rector of the Imperial College of Science and Technology, formerly fellow of Brasenose College and professor of engineering science at the University of Oxford, has been elected to an honorary fellowship at Brasenose College.

ROY B. WHITE, president of the Baltimore and Ohio Railroad, has been elected chairman of the Board of Trustees of the Maryland Academy of Sciences. He succeeds Herbert A. Wagner, chairman of the Consolidated Gas Electric Light and Power Company of Baltimore. Mr. Wagner was named honorary chairman of the academy.

AT a business meeting of the Botanical Society of America, held in the Biological Laboratories of Harvard University on February 8, new officers were elected and members appointed on special committees.

The newly elected president is Dr. William J. Robbins, director of the New York Botanical Garden. Professor George S. Avery, Jr., Connecticut College, was elected vice-president. Professor Arthur J. Eames was reelected a member of the editorial board of the *American Journal of Botany*, the official journal of the society. The newly appointed representatives of the society on the council of the American Association for the Advancement of Science are Dr. P. W. Zimmermann and Dr. F. D. Kern. Members of the Committee on Nomenclature, the Committee on Botanical Teaching and the Emergency War Committee were reappointed for another year.

DR. C. E. MCCLUNG, professor of zoology emeritus of the University of Pennsylvania, has been appointed to act as chairman of the department of zoology at Swarthmore College during the absence of Professor Laurence Irving, who has been commissioned Major in the Army Air Corps and ordered to the Air Forces Proving Ground Command, Elgin Field, Florida. Professor Robert K. Enders has also been instructed to report for military service. Dr. C. Brooke Worth was commissioned in the Medical Corps several months ago. Other members of the department who will soon leave for military service are Dr. P. F. Scholander, George A. Edwards, Lloyd Merritts and Henry Mahler.

THE Zoological Society of Philadelphia announces the appointment of Dr. David L. Coffin, instructor in veterinary pathology at the University of Pennsylvania, to the Herbert Fox memorial fellowship in comparative pathology. Dr. Coffin will serve as assistant to Dr. Herbert L. Ratcliffe, who is the newly appointed director of the Penrose Research Laboratory of the Zoological Society of Philadelphia, and also as assistant professor of comparative pathology at the University of Pennsylvania. Thus, a long-established practice of joint staff appointments between two well-known Philadelphia institutions will be continued. This fellowship, established in 1942 in memory of Dr. Herbert Fox, pathologist and director of the Penrose Research Laboratory from 1907 to 1942 and professor of comparative pathology at the University of Pennsylvania from 1927 to 1942, provides for half-time work at the Zoological Garden by faculty members of the School of Veterinary Medicine of the university who are interested in the diseases of wild animals.

Museum News states that Manuel Urrutia, director of the National Museum of Hygiene, Mexico City, at the suggestion of the Pan American Sanitary Bureau, has become an interne for three months at the Cleveland Health Museum.

G. K. HICKIN, formerly with Merek and Company, Inc., recently has been appointed head of chemical

engineering design for the B. F. Goodrich Company, Akron, Ohio.

DR. ALEXANDER L. BASSIN, assistant professor of orthopedic surgery at the Yale School of Medicine and associate surgeon (orthopedist-in-chief) of the New Haven Hospital, reported on March 1 for active duty at St. Albans, L. I., as a Lieutenant Commander in the Medical Corps of the Navy.

DR. WILLIAM F. DILLER, assistant professor of zoology at the University of Pennsylvania, has been commissioned a first lieutenant in the United States Army.

ALEXANDER B. KLOTS, of the department of biology of the College of the City of New York and of the department of entomology of the American Museum of Natural History, has been commissioned a captain in the Sanitary Corps and is stationed at Camp Joseph T. Robinson, Arkansas.

AT Iowa State College the following members of the faculty have leave of absence to permit them to take commissions in the food and nutrition section of the sanitary corps of the United States Army: Captain H. L. Wilcke, head of poultry husbandry; Captain A. L. Anderson, associate professor of animal husbandry, and Lieutenant W. J. Shannon, assistant professor of chemistry.

DEAN ALBERT B. NEWMAN, of the School of Technology of the College of the City of New York, has been appointed regional representative of the War Man-Power Commission for New York State. He will act in an advisory capacity to the war-training programs in this area, which include projects of the National Youth Administration, the U. S. Office of Education and private industry.

The Times, London, reports that R. A. McCance, who is an authority on the chemical composition of foods and nutrition, is making a lecture tour of Spain and Portugal, arranged by the British Council. He is to speak in Portugal on "The Physiology of Infancy" and in Spain on "Progress and Problems in Mineral Nutrition."

DR. E. G. GERWE, until recently director of laboratories of the William S. Merrell Company, of Cincinnati, joined the staff of E. R. Squibb and Sons, New York, on February 1. He is in charge of the control divisions of the pharmaceutical and chemical manufacturing laboratories of the Squibb plants in Brooklyn and New Brunswick, N. J.

DR. CHARLES PUTNAM SYMONDS, Air Commodore in the Royal Air Force, consultant in neurology, delivered on March 10, 11 and 12 at 5 o'clock at the Harvard Medical School a series of Edward K. Dunham Lectures for the promotion of the medical sciences.

His subject was "The Human Response to Flying Stress."

DR. HENRY NORRIS RUSSELL, professor of astronomy at Princeton University, delivered a public lecture at the University of California at Los Angeles on March 3. The lecture, entitled "Science Looks at God," was given under the auspices of the University Committee on Lectures, Music and Drama.

DR. C. E. MARSHALL, professor of soils at the University of Missouri, lectured at Iowa State College on February 24 and 25. He spoke on "The Chemical Environment of the Plant in the Soil" and on "Some Electrochemical Properties of Membranes and Their Relationship to Problems of Biology and Agriculture."

DR. KARL PAUL LINK, professor of biochemistry at the University of Wisconsin, delivered on February 25 the Edward C. Lee Memorial Lecture in Chemistry in the Kent Chemical Laboratory of the University of Chicago. His address was entitled "From the Haystack to the Clinic via Coumarin Chemistry."

THE initiation of new members into the Smith Chapter of the Society of the Sigma Xi will take place on Thursday, March 18. The initiation will be preceded by a business meeting of the chapter, and will be followed by a dinner and public lecture. The lecturer will be Professor George Wald, of the Biological Laboratories of Harvard University, who will speak on "The Evolution of Vision and the A Vitamins."

SIR STAFFORD CRIPPS, British Minister of Aircraft Production, was the principal speaker in a discussion on the organization of science in war-time at a conference held on January 30 by the British Association of Scientific Workers. Sir Laurence Bragg was one of the speakers in a discussion on scientific planning, which took place on the following day.

THE twenty-second annual conference of the North Central States Entomologists will meet at Purdue University on March 25 and 26. The program will deal with insect problems of the Armed Forces, Priority Chemicals and Insecticide Substitutes, and Protection of Crops and Animals Essential to the War Effort. The Central Plant Board will meet at Purdue on the two preceding days, the Extension Entomologists on the twenty-fourth, followed by the Chinch Bug Conference in the evening.

THE Medical College of Virginia, Richmond, will sponsor a symposium on nutrition which will be held on March 25, 26 and 27. Addresses will be given by Dr. J. C. Funk, director of health education, State Health Department, on "Nutrition Activities of the State Department of Health," and by Dr. W. H. Sebrell, of the National Institute of Health, on "Nu-

trition in a Changing World." The following day a series of papers on various aspects of nutrition is planned. There will be a dinner at 7 P.M., at which Dr. V. P. Sydenstricker, of the University of Georgia, will give an address on "War-time Nutrition in England." On Saturday morning a panel discussion will be led by Dr. Lydia J. Roberts, of the University of Chicago, on "Teaching Nutrition Material to Elementary School Children."

THE Society of Rheology and the Polytechnic Institute of Brooklyn will hold a joint research conference on "The Present State of the Kinetic Theory of Rubber Elasticity" on Saturday, April 3, at 10:30 A.M. at the institute. The program includes a paper by Dr. M. L. Huggins, of the Eastman Kodak Company Research Laboratory, Rochester, N. Y., on "Statistical Treatment of Long Chain Molecules," and by W. L. Wood, of the National Bureau of Standards, on "The Present Experimental Aspect of Rubber Elasticity." These papers will be discussed by authorities in the subjects.

THE Executive Board of the American Public Health Association announces that the association will sponsor a three-day Wartime Public Health Confer-

ence in New York City on October 12, 13 and 14. The seventy-second annual business meeting of the association will be held in connection with it. The program will be devoted exclusively to wartime emergency problems as they affect public health and the public health profession.

ACCORDING to the *Journal* of the American Medical Association the research prize of \$500 of the American Urological Association will not be awarded this year and plans for the June meeting in St. Louis have been cancelled. The American Association for the Study of Goiter has postponed all meetings for the duration of the war. All officers will hold their positions until the next meeting of the association. The 1943 session of the American College of Chest Physicians has been cancelled.

The Times, London, reports that at a meeting of the Royal College of Surgeons of England, Dr. J. Newman Morris conveyed a message of greetings from the Royal Australasian College of Surgeons. In return the president handed to him, as a token of friendship to the sister college, a First Edition (1664) of Willis's *Anatomy*, the illustrations of which are by Sir Christopher Wren.

DISCUSSION

THE FUNDAMENTALS OF SALMON CONSERVATION¹

THE conservation of the salmon fisheries is a matter of momentous importance in view of a promise of a real food shortage in the not too distant future. In addition to this we owe it to posterity to preserve the anadromous fishes since it is through these fishes that the vast oceanic plankton is in part made available, which is otherwise unavailable as food for man.

The most efficient conservation methods can be developed only through an understanding of the fundamental factors affecting the migratory movements of these fishes.

It has now been shown that salmon and certain other fishes do respond to a carbon dioxide tension gradient.^{2,3,4} That there is more than a probability that there is a carbon dioxide tension gradient from the spawning streams to the oceanic feeding grounds has been demonstrated.⁵ Powers and Clark⁴ have shown that the brook trout and the rainbow trout not only respond to very slight carbon dioxide tension

gradients but that these fishes respond to the carbon dioxide tension gradient through receptors located in the lateral line organs.

It now remains to put the culminating tests to the salmon themselves. This can be done by two simple methods. First, the gradient tank technique can be employed to determine the capacity of the adult salmon, with and without lateral line nerves bilaterally sectioned just distal to the gills, to respond to very slight carbon dioxide tension gradients. Second, as in the past homeward bound salmon could be tagged and liberated. The lateral line nerves could be bilaterally sectioned just distal to the gills of one out of each two salmon tagged. If the salmon do find their way back to their home stream through a response to a carbon dioxide tension gradient through receptors located in the lateral line organs, the salmon with lateral line nerves bilaterally sectioned should be less apt to find their home stream than those with their lateral line nerves intact. The only complicating factor that might be involved would be the gregarious habits of the salmon. Even then those with lateral line nerves bilaterally sectioned should be less apt to find schools and in turn would be more apt to be lost from schools than those with lateral line nerves intact.

Since the author will most likely never be permitted to carry out these tests himself, he is publishing these suggestions in the hope that these tests will be made

¹ Contribution No. 10, Department of Zoology and Entomology, University of Tennessee, Knoxville.

² V. E. Shelford and E. B. Powers, *Biol. Bull.*, 28: 315, 1915.

³ E. B. Powers, *Publ. Puget Sound Biol. Sta.*, 22: 1, 1921.

⁴ E. B. Powers and R. T. Clark, *Ecology*, 24: 100, 1943.

⁵ E. B. Powers, *Ecology*, 22: 1, 1941.