

recommends the introduction of a number of valuable food and game fishes from the United States and the construction of a hatchery for their propagation.

Owing to the density of population of Puerto Rico there is a scarcity of food and the people living inland, particularly, are unable to secure food sufficiently rich in proteins. In his report to the Commissioner of Fisheries, Dr. Hildebrand states:

Puerto Rico has a considerable number of rather long, permanent streams, the longest and largest ones being the Rio Anasco, the Rio Grande de Arecibo, the Rio Manati, the Rio la Plata and the Rio Grande de Loiza.

Several streams have been dammed, creating reservoirs, used in part for irrigation and in part for hydroelectric purposes or both. The larger permanent reservoirs are: Gujataca, Cavite, Patillas, Guoyabal, Guineo and Comorio.

There are now no fishes of importance in the fresh waters of Puerto Rico. The lower stretches of the streams, up to an elevation of about 1,500 to 2,000 feet, are inhabited by the following species: The "dajoo," a fresh water mullet (*Agonostomus monticola*), which is of limited economic importance; 5 species of gobies, only 1 of which, the guovina (*Gobiomorus dormitor*), is of slight economic importance; a small top minnow (*Poecilia vivipara*), and the fresh-water eel (*Anguilla rostrata*), which is scarce. Above an elevation of about 2,000 feet no fish are present.

All the permanent streams and reservoirs examined, exclusive of Gujataca Reservoir, appear to possess physical and biological conditions which are suitable for the support of several species of American food and game fishes. The temperature of the waters is not excessively high. The upper stretches of the streams in some instances are low enough for trout. One reservoir (Guineo), located at an elevation of about 3,000 feet, too, appears to be cool enough for trout. The waters at lower elevations appear to be suitable for American warm-water fish, such as bluegills, crappies, catfish, etc.

All the streams up to the highest elevation reached (about 3,000 feet), and all the reservoirs (exclusive of Gujataca) are abundantly stocked with crustaceans, chiefly shrimp, and insects. Therefore, ample food for fish is present.

A small shipment of American fish, consisting of bluegill, sunfish, crappie and bullhead catfish, was introduced in two reservoirs (Cavite and Comorio), in about 1913. The fish survived and have multiplied, showing definitely that the conditions are suitable for these species of American fishes.

SYMPOSIUM IN THEORETICAL PHYSICS AT THE UNIVERSITY OF MICHIGAN

THE Symposium in Theoretical Physics at the University of Michigan will be held between the dates of June 25 and August 17. Throughout the eight weeks' session Professor George Gamow, of the Technological Institut of Leningrad, will lecture on the problem of

the nucleus. Professor Gamow, on leave of absence from Leningrad, has been spending the past year at Paris, Cambridge and Copenhagen and will present, in addition to his own contributions, the most recent views developing in these centers of nuclear research.

"The Theory of the Positron" will be discussed by Professor Oppenheimer, of the California Institute of Technology. His lectures given in the first month of the session will treat the recent developments in the relativistic quantum mechanics stimulated by the discovery of the positron. Supplementing these lectures will be a series of lectures by Professor Uhlenbeck, of Michigan, on "The Dirac Theory of the Electron." These will also be given during the first half of the session.

Professor Ernest O. Lawrence, of the University of California, will present in lectures given during the second half of the session the methods and recent experimental results on nuclear disintegration by bombardment with fast particles.

A series of special lectures will also be given during the second month on "The Problem of Cosmic Rays," Professor Arthur H. Compton, of Chicago, lecturing on July 26 and 27, and Dr. Thomas H. Johnson, of the Bartol Research Foundation, initiating a series of six lectures to be given during a two-week period beginning on July 23. Among these special lectures will be several by Professor Dennison, of Michigan, on the problem of molecular structure as studied through infra-red absorption spectra.

Throughout the summer symposium courses on quantum mechanics will be given by Professors Uhlenbeck and Dennison and on Line Spectra by Dr. Robert Bacher.

The formal lectures will be supplemented by a series of informal seminars throughout the session under the personal direction of Professors Gamow, Uhlenbeck and Dennison.

The summer meeting of the American Physical Society will be held at Ann Arbor on June 29 and 30, during the first week of the session. Additional information regarding the symposium or about living quarters for either the symposium or meeting of the Physical Society may be had by addressing the director of the Physical Laboratories, University of Michigan, Ann Arbor, Mich.

NATIONAL RESEARCH FELLOWSHIPS IN THE BIOLOGICAL SCIENCES

THE annual meeting of the Board of National Research Fellowships in the Biological Sciences, for the award of appointments for 1934-35, was held in Washington, D. C., on March 24 and 25. Sixteen reappointments and twenty-five new appointments were made as follows:

REAPPOINTMENTS

For Domestic Study

Abbe, Ernst C.—Botany
 Barker, Harold Albert—Zoology
 Clark, Harold E.—Agriculture
 Dyk, Walter—Anthropology
 Gardner, William U.—Agriculture
 Goddard, David R.—Botany
 Harrison, Carter M.—Agriculture
 Hunt, Joseph MeVicker—Psychology
 Lindsley, Donald B.—Psychology
 Livingston, Luzern G.—Botany
 Mackinney, Gordon—Botany
 Moyer, Laurence S.—Botany
 Pady, Stuart M.—Botany
 Park, Thomas—Zoology
 Seltzer, Carl C.—Anthropology
 Steinbach, H. Burr—Zoology

NEW APPOINTMENTS

For Domestic Study

Adler, Carolyn—Anthropology
 Anderson, Edward E.—Psychology
 Baker, Kenneth F.—Botany

Breneman, William Raymond—Zoology
 Brodie, Harold J.—Botany
 Chandler, Robert F., Jr.—Forestry
 Costello, Donald P.—Zoology
 Dunlap, Sarah C.—Psychology
 Geiman, Quentin M.—Zoology
 Hill, Willard W.—Anthropology
 Kopac, Milan James—Zoology
 Madsen, Louis L.—Agriculture
 Newman, Edwin B.—Psychology
 Pennington, Leon A.—Psychology
 Scheffer, Theodore C.—Forestry
 Shapiro, Herbert—Zoology
 Stare, Fredrick J.—Zoology
 Stevens, Stanley S.—Psychology
 Weber, Neal A.—Zoology

For Foreign Study

Arensberg, Conrad M.—Anthropology
 Bonner, James—Botany
 Hamilton, Robert H.—Zoology
 Lush, Jay Laurence—Agriculture
 Mozley, Walter Alan—Zoology
 Steinhardt, Jacinto—Zoology

SCIENTIFIC NOTES AND NEWS

PROFESSOR JOHN J. ABEL, director of the Laboratory of Endocrine Research at the Johns Hopkins University, has been awarded the Kober Medal of the Georgetown University School of Medicine, in recognition of his forty-one years of distinguished service as professor of pharmacology at the Johns Hopkins University. The medal will be presented at the annual meeting of the Association of American Physicians, which will be held at Atlantic City on May 1 and 2. Dr. Abel gave the first Kober lecture in 1925.

THE Hillebrand Prize of the Chemical Society of Washington for the year 1933 has been awarded to the late Edward Wight Washburn for the discovery of the first practical method of separating the isotopes of hydrogen.

THE Lucas Trophy, given annually to "the resident of Savannah, Georgia, who performs the most worthwhile service for the city," has been awarded to Dr. Chas. H. Herty, in recognition of the value of his work looking toward the utilization of pine in the manufacture of paper pulp.

PROFESSOR J. W. WHITE, for twenty-eight years engaged in research for the Agricultural Experiment Station, Pennsylvania State College, has been selected as the first annual research lecturer by the College Senate Research Committee. He will deliver a lec-

ture on "The Scope and Significance of Our Soil Research Program" on Friday evening, May 11.

R. S. FLEMING, director of the Research Laboratory of the Borden Company, Syracuse, N. Y., was tendered a banquet on April 3 on the anniversary of his affiliation with the Merrell-Soule Company, now the Borden Company, in 1909. The speakers included Dr. Saul Dushman, assistant director of the Research Laboratory of the General Electric Company; F. C. Soule, formerly president of Merrell-Soule; Professor George W. Cavanaugh, of the department of agricultural chemistry at Cornell University, and Dr. Lawrence W. Bass, acting director of the Borden Company. Mr. Fleming was presented with a large silver bowl by John H. Nair, assistant director of the Research Laboratory.

DR. WALTER GARSTANG, who retired last year from the chair of zoology at the University of Leeds, was recently presented with a radiogramophone and a check as a token of the appreciation of some two hundred colleagues and students.

PROFESSOR D. M. S. WATSON, professor of zoology at University College, London, and F. R. Parrington, Strickland curator at the university, were recently guests of honor at a reception given by the Research Club of the American Museum of Natural History. Professor Watson will give the James Arthur Lecture