develop improved kinds of timber trees, by selection, by hybridization and by comparative tests of wild seed, selected seed and hybrid seed. We have every confidence in the outcome of such research and experimentation, for the tree is only a plant and that kind of experiment has succeeded with every other plant to which it has been scientifically applied. A white pine so improved in its rate of growth that it will reach in fifty years or in sixty years the size that now requires eighty years would repay the cost of the National Arboretum for a generation.

The members of the American Society of Landscape Architects here present may with propriety be asking for what purpose is this address delivered before this society, for although much has been said about the relation of the arboretum to forestry and to horticulture, little has been said about its relation to landscape art. I must confess that at the present time I am chiefly concerned not with what the National Arboretum can do for landscape art but with what landscape art can do for the National Arboretum.

The arboretum is still in the land-purchase stage. Its actual operation has not yet begun. The secretary of agriculture has purchased, or is in process of purchasing, 268 acres. He expects to make additional purchases which, with other land already owned or claimed by the government, will make a total of approximately the thousand acres originally planned for the arboretum. The site contains several elements of great dignity and beauty: Mount Hamilton, covered with a growth of mature hardwood timber and overlooking the city, with an excellent view of the Capitol, the Washington Monument and the Arlington hills in Virginia; Hickey Hill, with fine views up the Anacostia River and down it to the Potomac; the curve of the upper Anacostia, bordered with wild-rice and sweeping around to the old deer lick at Licking Banks, and the waterlily gardens at Kenilworth, one of the most beautiful sights in the city of Washington.

The National Arboretum is to be an outdoor laboratory for scientific research on trees. The materials for research are the trees and shrubs that will be planted in the area. It is planned to bring there every kind of tree that will thrive out of doors under this climate. There will be buildings, greenhouses and nurseries. Broad highways will border the arboretum, and it is expected that one of the principal entrances to Washington will pass through it. The parts of the arboretum in contact with these principal streets, or in view from them, should be developed with all the natural beauty that the situation affords. The greenhouses, the nurseries, the experimental plantings in straight lines and the every-day work with spades and hoes should be secluded from the main highways.

In the development of the National Arboretum the secretary of agriculture already has the hearty cooperation of the Garden Club of America, the American Association of Nurserymen and many scientific organizations. He would greatly appreciate the cooperation and advice of the American Society of Landscape Architects.

OBITUARY

JULIUS BUEL WEEMS

DR. JULIUS B. WEEMS, chief chemist of the Agricultural Department of the State of Virginia, died suddenly on Saturday morning, January 25, at his home in Ashland, Virginia.

Dr. Weems had been with the state for fifteen years and was widely known as a chemist. His contributions to scientific journals, in the form of articles on agricultural and chemical problems, added to the reputation which he had as a consulting and analytical chemist, and a student of farm questions before he came to the Department of Agriculture.

He was born in Baltimore, August 27, 1865, the son of Edwin Dawson Weems and Rosetta Norman Weems. Following his graduation from Maryland Agricultural College in 1888, he studied at Johns Hopkins University for two years. In 1894, while a fellow in chemistry at Clark University, he received his degree of Doctor of Philosophy. For the next ten years he was professor of agricultural chemistry and chemist of the experimental station at Iowa College.

Dr. Weems was a member of the Society of American Bacteriologists, the American Chemical Society, and a fellow of the American Association for the Advancement of Science.

W. C. J.

AUGUST TOBLER

THE death is announced on November 23 of Dr. August Tobler, the director of the Geological Section of the Natural History Museum, Basel, Switzerland. Dr. Tobler was a geologist of international reputation. He did much work in the Netherlands East Indies, his principal publication on that region being "Djambi-Verslag," which consists of a volume of 585 pages of text and 19 plates and an atlas of 9 geological maps, structure sections and a table of the different geological formations. Dr. Tobler also made studies of the geology and paleontology of northern South America, especially Venezuela and Peru. The high quality of Dr. Tobler's work is recognized by every one familiar with it. Besides the respect due him because of his scientific attainments, he endeared

himself to his scientific colleagues by the help that he was ever ready to render them in their investigations. His death causes a severe scientific loss and removes a personality which had extended its kindly influence to all the continents.

T. W. V.

KAMAKICHI KISHINOUYE

DR. KAMAKICHI KISHINOUYE, professor emeritus of fisheries in the faculty of agriculture in Tokyo Imperial University, died on November 22, 1929, at Chengtu, Province of Szechuan, China, while collecting fresh-water fishes in the upper part of the Yangtze-Kiang. He started from Tokyo last August on an expedition to collect fishes along the Yangtze-Kiang and had been successful in obtaining much material, but was attacked with some alimentary disorder and died on November 22.

Professor Kishinouye was in several lines of work one of the leading scientific men of Japan. He published a number of papers on the Alcyonarian corals, paying special attention to those that produce coral of commercial value. He studied numerous problems of the life history of Japanese fishes and was especially well known for his investigations of the scombroid (mackerel) group. He was the author of a volume entitled "Contributions to the Comparative Study of the So-called Scombroid Fishes," published in the *Journal* of the College of Agriculture of the Imperial University of Tokyo, Volume 8, No. 3, 1923.

Professor Kishinouye attained high scientific recognition in his native country, being a member of the Imperial Academy of Sciences. Besides being a man of scientific distinction he possessed great personal charm and was a good example of the courteous Japanese gentleman of the old school.

T. W. V.

RECENT DEATHS

DR. LEA MCILVAINE LUQUER, tutor and associate professor of mineralogy at Columbia University from 1887 to 1925, died on January 30, at the age of sixty-four years.

DR. J. FRED MOHLER, for thirty-three years professor of physics at Dickinson College, died on January 28 at the age of sixty-five years.

WILLIAM WALLER CARSON, professor emeritus of civil engineering at the University of Tennessee, died on February 7, at the age of eighty-four years.

DR. THORBURN BRAILSFORD ROBERTSON, professor of physiology and biochemistry at the University of Adelaide, died on January 27 at the age of forty-five years.

SIR GEORGE DANCER THANE, the British anatomist, died on January 14 at the age of seventy-nine years.

DR. YOSHIAKI OZAWA, professor of paleontology at the Imperial University of Tokyo, died on December 29. Dr. Ozawa had returned to his work in Japan this last summer after two years of foreign study in Europe and the United States.

DR. BENEDIKT DYBOWSKI, professor of zoology at Lwow University, died on February 1, at the age of ninety-five years. After being exiled to Siberia for participating in the 1863 insurrection in Poland he undertook a study of fauna from Lake Baikal to Kamchatka.

SCIENTIFIC EVENTS

AGRICULTURE IN THE BRITISH EMPIRE

THE nineteenth annual report of the British Development Commissioners for the year ended March 31, 1929, deals, according to a report in the London *Times*, with a large range of questions affecting agriculture, rural economy, fisheries and harbors, the compulsory acquisition of land for road improvement, and the financial position of the development fund.

The total advances from the development fund recommended during the year amounted to £394,752, compared with £383,652 in 1927–28. The administrative expenses of the commission amounted to £9,315, compared with £9,887 in the preceding year.

Since the commissioners' last report eight bureaus have been established in accordance with the recommendation of the Imperial Agricultural Research Conference in 1927. Their purpose is to collect and disseminate information of a scientific character on various branches of agricultural research. Their establishment so soon after the meeting of the conference is a matter for congratulation, the commissioners remark, because of the assistance they will give to scientific workers in different countries. But the benefit to individual and isolated workers is not the only reason for which the bureaus are welcomed. Since they are the result of joint action taken by a number of empire governments, will be controlled by a representative empire committee, and financed by empire contributions, the bureaus are to be welcomed as a first—and it is to be hoped only a first—step in a policy of cooperation by the governments of the empire for the promotion of agriculture by enlisting scientific aid.

It is estimated that £22,000 per annum will be required to maintain the bureaus, and this sum is being raised by proportionate contributions. The contribu-