ventiveness are everywhere apparent; he was at once the architects' best collaborator and the investigators' chief reliance, in construction and equipment. He introduced and perfected the new system of accounting that the larger operations demanded, and was constantly at the service of investigators in the satisfaction of their multifarious needs.

Drew was an upstanding, unselfish, conscientious, uncompromising, energetic man, enjoying the confidence of all, and the affectionate regard of many friends. His election as president of the American Society of Zoologists in 1920 testifies to the respect of his confrères. His memory deserves perpetual preservation in the minds of American biologists.

FRANK R. LILLIE

RECENT DEATHS

DR. EDWARD RENOUF, from 1890 until his retirement in 1911 collegiate professor of chemistry at the Johns Hopkins University, died on November 14 at the age of eighty-six years. Dr. Renouf had been connected with the university since 1885, when he was appointed assistant in chemistry.

DR. ERIC VON FUELNEGG GEBAUER, organic chemist, of Gary, Ind., formerly assistant professor in the Medical School of Northwestern University, died on November 18, from inhaling hydrochloric acid gas, while carrying out an experiment in his laboratory. He was thirty-three years old.

DR. KARL RITTER VON LINDE, who developed the Linde process for the manufacture of liquid air, died on November 16, in his ninety-third year.

HENRY ATTWOOL ALLEN, formerly a member of the staff of the British Geological Survey, died on October 3 at the age of seventy-nine years.

SCIENTIFIC EVENTS

THE WAITE AGRICULTURAL RESEARCH INSTITUTE

AN account of the history and development of the Waite Agricultural Research Institute from the year 1925, when its activities first started, up to 1932 has been issued by the University of Adelaide and is summarized in *Nature*. Although the chief objective of the institute is to conduct research on plant and soil problems, it also provides an advisory service to the Department of Agriculture in plant pathology and entomology and gives specialized courses of instruction for the agricultural degrees in the University of Adelaide.

The scope of the scientific work undertaken at the institute covers a wide field. As might be expected, the limited rainfall and the development of a system of cereal and grassland management to suit such conditions forms one of the major problems, and a study of the water requirements of plants under various manurial treatments and the differences exhibited by improved varieties of cereals and leguminous plants in this respect has led both to increases in yield being obtained and also to the extension of the area capable of supporting the crop. Pasture problems are being investigated both from the agricultural and the chemical point of view, special attention being paid to their mineral content and improvement by means of the introduction of superior species and strains.

Survey and classification of the various soil types in Australia forms a further branch of the work in the chemical section, and fertility problems, particularly in the irrigation settlements, are also being investigated. Entomological work has only been in progress since 1929, but already much valuable information has been obtained with regard to various pests of pasture, cereal and orchard crops. Diseases of agricultural crops inevitably form an important branch of the work of the institute, and deficiency diseases due to a lack of some mineral element have also been successfully investigated. Breeding experiments with the view of securing varieties with improved resistance to fungus diseases form a natural corollary to the work of the plant pathology section.

Besides the land devoted to agricultural experiments, a certain area is reserved as a permanent park. Advantage has been taken of this to plant a portion as an arboretum, one section being used for indigenous, and another for introduced, species. The report includes a list, with abstracts, of the one hundred and forty-one papers published from the institute during the years under review.

ELM DISEASE IN GREAT BRITAIN

THE London *Times* writes: "The conclusion this autumn of the seventh annual survey of the elm disease permits a review of the extent of attack by this insidious and at times highly virulent malady of the elm genus." During the past summer the disease has made definite progress in nearly every area examined, but the severity of attack is still below that of the peak year, 1931.

Infected trees have been recorded in three new counties, Lancashire, Merionethshire and Cornwall. If the counties of England and Wales are classified according to severity of attack the following position is

found: Frequent and often serious, 9; sporadic, 16; seldom found, 16, and disease not reported, 11. A more wide-spread survey would almost certainly add to the numbers in the classes "sporadic" and "seldom found."

The first class, in which the disease is frequent and often serious, includes only nine out of the 41 counties where it is known to occur, and with one exception—the Isle of Wight—these lie to the east and north of London. There is no indication as yet of any tendency for the disease to extend its virulent range westwards. Severe local outbreaks do occur, but they are usually very restricted, and over the greater part of England it is doubtful if the casual observer would be aware of the presence of the disease.

The progress of those trees in which evidence of continued die-back is no longer visible is being carefully watched, according to the *Times*. The number of such "recoveries" is still large, but the fungus usually remains dormant in the wood of the branches. A renewed onset of the disease has already taken place in some of these trees, so that recovery is by no means assured. A limited number of cases are known where all trace of the fungus has gone and the tree appears perfectly normal.

With regard to preventive measures, lopping is only successful if the disease is taken at a very early stage, and even then there is always the possibility of reinfection. Apart from the removal of dead and fallen trees, successful measures have not yet been devised for keeping in check the elm bark beetles, which act as chief carriers of the disease.

Although there is still no definite record of the elm disease in Scotland, some laboratory work has been done on the sickly elms found during last year's survey in that part of the country. Various fungi have been isolated, and work on these is proceeding.

CENTER FOR POLAR RESEARCH AT CAMBRIDGE, ENGLAND

ACCORDING to a wireless dispatch to *The New York Times,* the new center for polar research was opened at Cambridge, England, on November 16 by Stanley Baldwin, Lord President of the Council, in the presence of many veteran Arctic explorers.

Designed as a memorial to Captain Robert Falcon Scott and as an information center for future explorers, the new building will house the School for Polar Research, which has been in existence at Cambridge for several years. In the words of the director, Professor Frank Debenham, it will make exploration "easier, less expensive and more valuable."

Mr. Baldwin said in part:

This building has been erected as a testimony to aspirations common throughout the world—a desire for adventure, knowledge and research into the secrets of nature.

Every continent and island in the world has its own tales of heroism and fortitude—tales which have come down from generation to generation to stir the hearts of men. Names like Frobisher, Hudson, Perry and Franklin are still a trumpet call to all those whose heart-strings vibrate to the inner call of adventure.

In the South the two names of Shackleton and Scott stand out supreme, but let us never forget the many others whose names have not lived after them, but whose courage and endurance were as great. Arctic and Antarctic exploration is a prolonged war which needs strategy and carefully laid plans for its successful prosecution. The new building provides a venture in study and research for all those going out into the partly known and unknown.

On the front of the building is a bust of Scott executed by his widow. Above it on the frieze are the words, "Quaesivit Arcana Poli Videt Dei"—"He went seeking secrets of the Poles and he sees God." In the forecourt stands a symbolic statue given by Lady Young as a memorial to the five who died with Scott on his last strategic expedition, among them Captain Oates, "a very gallant gentleman."

The facilities of the building include a library, map room, research room, museums and archives containing all available log books, diaries and weather records kept by polar expeditions.

Polar veterans who attended the dedication ceremony, according to the *Times,* included Dr. Jean Baptiste Charcot, leader of two French expeditions to the Antarctic; Dr. Ejenar Mikkelson, Danish Greenland explorer; Admiral Sir George Egerton, who first went to the Arctic almost sixty years ago; Daugard Jensen, head of the Greenland Administration Board; Vice-Admiral Sir Reginald Skelton, chief engineer of Scott's first expedition, and others who served under Scott or Shackleton in Antarctic adventures.

RESEARCH IN ENGINEERING AT HARVARD UNIVERSITY

THE following is a list of some of the more important contributions which the Harvard Engineering School has recently made through its research activities as given in *The Harvard Alumni Bulletin:*

(1) The investigation of the properties of steam as part of a rational project, with the experimental work carried out in three institutions. This work has been accepted and is now in course of being embodied in the international standardization of accepted values for the properties of steam. It has been the basis for the design of modern high-pressure and high-temperature steam machinery.

(2) The investigation of fans for mixing large vol-