always when the stars were visible early or late. By day he had classes to meet in class rooms five miles away. For one evening each week the telescope was devoted to visitors. During cloudy weather, between classes and at other odd times he was busy in applying the new method developed by G. W. Hill, for the computation of the secular perturbations of the planets. No constitution could stand this terrific pace. His premature death was the result.

Professor Doolittle's fame rests chiefly upon his observations and discussions of double stars. The publications of the Flower Observatory contain measures of 3,920 double and multiple stars made by him together with the remeasurement of 648 double stars discovered by Hough. Another series of observations is ready for publication. Many discussions of double stars and other subjects are found in the astronomical journals.

In 1913 S. W. Burnham, who had long been recognized as the world's authority upon double stars, feeling that his age no longer permitted him to attend properly to the duties he formerly performed turned over his manuscripts and his library on double stars, a practically complete and priceless collection, to Professor Doolittle, thus placing the mantle of the world's foremost double star astronomer upon him. Burnham's great work "General Catalogue of Double Stars" appeared in 1906. Professor Doolittle has been most faithful to his trust, for in the safe at the Flower Observatory there is a large card catalogue known as the extension of Burnham's General Catalogue. On these cards are found the observations, discoveries and other information relating to double stars which has accumulated since the publication of the General Catalogue. This information is available to those interested. The work will of course go on and be published at some future time.

The results of his computations of secular perturbations were published as the parts were completed in *The Astronomical Journal*. When all the work was done the results were combined and discussed in "The Secular Perturbations of the four Inner Planets" published by the American Philosophical Society, of which he was a member, in 1912. These results were obtained with most painstaking care and are not likely to be superseded for a long time.

He helped to popularize astronomy by editing and himself writing a large part of Vol. IV. of the "Foundation Library" entitled "The Wonderful Universe" and another work which has not yet appeared. He was widely known as the author of a series of popular monthly articles on current astronomical events which have appeared in various magazines and newspapers throughout the country continuously from 1904 until August, 1920.

He was extremely modest, loving simplicity and hating ostentation. His great ability and worth would no doubt have been more widely known and appreciated had he been more of a selfseeker. He was greatly admired and loved by his students, particularly by graduate students. Those who knew him best loved him most.

SAMUEL G. BARTON

SCIENTIFIC EVENTS

AGRICULTURAL WORK OF THE NATIONAL RESEARCH COUNCIL

WITH the advice and assistance of the National Research Council a cooperating group of scientific investigators of insect pests and plant diseases together with representatives of leading industrial concerns engaged in the manufacture of chemicals and appliances used in fighting these enemies of crops has been organized under the name of the Crop Protection Institute. This institute will undertake and support a series of thorough scientific studies of the crop pests themselves and of the means of improving and standardizing the materials and appliances used in fighting them. The Board of Trustees of the institute is composed of nine scientific men representing leading scientific organizations interested in crop protection and four representatives of the manufacturing and commercial interests. The temporary secretary is Mr. Harrison E. Howe, chairman of the Division of Research Extension of the National Research Council.

The annual losses because of the attacks on growing and stored crops by insect pests and plant diseases are enormous despite all that has been done to lessen them. A conservative estimate of the loss of wheat in the United States in a single recent year because of the black stem rust is 180,000,000 bushels, and this pest is but one of the many that attack the wheat every year. What is needed is a combination and concentration of attack on these pests. The new Crop Protection Institute will help to bring this about. It is not intended that the institute will interfere with or duplicate existing efforts now being made by government bureaus, state experiment stations and other agencies to fight crop pests, but that it will introduce a more general cooperation in the work and give special attention to filling important gaps that now exist in it.

The National Research Council has issued a list of references to investigations upon the production of corn and its uses, prepared by M. Helen Keith, of the Illinois Agricultural Experiment Station. The list includes over 1,300 articles which have been published within recent years in this country and abroad. These investigations cover a wide range of problems such as the breeding and growing of corn as affecting its yield and nutritive qualities, the curing of corn and the preparation of silage, the systematic feeding of farm animals, the physiology of corn nutrition, including its relation to pellagra, the chemical composition of corn, and the extraction of such products as iodine, chloroform, oils, alcohol and benzine. Altogether the list shows that the scientific investigation of all phases of corn problems has become exceedingly extended and important.

THE PROPOSED EXPEDITION TO ASIA OF THE AMERICAN MUSEUM OF NATURAL HISTORY

Announcement has been made of an expedition to be sent out by The American Museum of Natural History in cooperation with the American Asiatic Association and *Asia Magazine,* the object of which is to search for the most primitive human remains. It will work for five years in various remote regions of central Asia and will be under the direction and leadership of Mr. Roy Chapman Andrews, associate curator of mammals in The American Museum of Natural History, who for the last ten years has been carrying on zoological explorations in various parts of the Far East. The expedition will be financed by a fund of $250,000, which is being provided by The American Museum of Natural History, The American Asiatic Association and *Asia Magazine,* and the private subscriptions of Mrs. Willard Straight, Messrs. J. P. Morgan, George F. Baker, Childs Frick, W. A. Harriman and Mr. and Mrs. Charles L. Bernheimer.

In the year 1891, a Dutch army surgeon, Eugene Dubois, while excavating for fossils in central Java, discovered near Trinil part of a skull, two molar teeth and a thigh bone. This discovery has been supplemented by that of other indisputably human remains of which the most ancient, found in southern Germany, is the jaw of the so-called Heidelberg man who may be two hundred and fifty thousand years old.

With the exception of the Java specimen, all fossil human fragments have been discovered in Europe or England. It is, however, believed, that whatever light may be thrown upon the origin of man will come from the great Asian plateau.

Leaving about the first of next February, headquarters for the expedition will be established in Peking. The first year will be devoted to studies in paleontology and zoology in China; the second year the work will be carried into Mongolia and a geologist will be added to the field staff; the third, fourth and fifth years archeologists and anthropologists will be sent out who with the zoologists and paleontologists will carry on work in various parts of Asia.

The importance of this region long has been recognized, but no systematic study on a large scale ever has been attempted, and there is no similar area of the inhabited surface of the earth about which so little is known. Whether or not human remains are found it