is not sufficient to cause the accumulated nitrates to be leached into the drainage system, a condition that prevails in most irrigated sections, a comparatively large amount of available nitrogen will be present in the soil and ready to function as soon as the growing season begins in the spring. Such supplies of available soil nitrogen are not possible in the humid climates naturally adapted to tree growth and it is only reasonable to suppose that this abnormal food supply in the spring will produce abnormalities in tree development.

Liberal supplies of available soil nitrogen are conducive to excessive vegetative growth and in the case of trees nitrates, present in large amounts in the very early spring, may serve as a stimulant for the development of a large number of buds and leaves. When later in the season this supply of nitrates is exhausted as is likely to be the case with these soils, which are at best not abundantly supplied with total nitrogen, there is no corresponding twig growth and elongation. The result is that the leaves are left in a light green colored, partly developed state, grouped close together near the ends of branches. The use of a nitrogen fertilizer, instead of overcoming this condition, as was at one time supposed, may even aggravate it if the application is made at the wrong time of the year. Surely it would seem illogical under such conditions to make heavy applications of readily available nitrogen fertilizers in the late fall, winter or early spring.

In orchards where legumes are grown to supply the nitrogen, the situation is different. The conditions that are conducive to the bacterial activity essential for nitrogen fixation by legumes and for the decay of soil organic matter necessary to release nitrogen for plant use, are the same conditions that promote best tree growth. There should be little danger, therefore, of the accumulation of an abnormal supply of available nitrogen, under conditions where that element of plant food is supplied by legumes or by slow acting organic fertilizers. That this is borne out where legumes are grown has been shown and it is also known that the roseatted condition does not develop but can be overcome when animal manures are used to supply the nitrogen. The property of manure to supply regular and normal amounts of available nitrogen in the proportion that the growing plant demands them has caused this fertilizer to become known as being "fool proof." When plants are fed with artificially prepared fertilizers of high availability an attempt should be made to apply such fertilizers at the time and in the proportion that they are required if best results are to be obtained, and this is especially true where perennial plants are grown and when the quality of the product is a factor. If these relationships are once properly understood many malnutrition problems can be controlled and commercial fertilizers may be used to exert influences on yield and quality never before credited to or claimed for animal manures.

F. J. SIEVERS

STATE COLLEGE OF WASHINGTON,
PULLMAN

SCIENTIFIC EVENTS

BUDGET OF THE BUREAU OF CHEMISTRY AND THE BUREAU OF BIOLOGICAL SURVEY

THE budget of the U. S. Department of Agriculture for the fiscal year 1929 (see SCIENCE, LXVII, page 186), which has been transmitted to congress by the president, includes the following recommendations for the work of the Bureau of Chemistry and Soils and for the Bureau of the Biological Survey:

Bureau of Chemistry and Soils, $1,244,963, which includes increases of $15,000 for studying methods for diversifying products made from sugar-cane and originating new products; $10,000 for food research, including a study of the deterioration of foods due to micro-organisms, chemical agencies, etc.; $10,000 for a study of the commercial utilization of citrus fruits, pomegranates, avocados, pears, prunes and other fruits; $10,053 for experiments and demonstrations in proper methods of removing and curing hides and skins, and study of little-used native tanning material and of foreign tannin-bearing plants; $5,000 for fundamental investigation of the chemical properties and utilization of lignin; $3,000 for extension of studies on the composition and utilization of vegetable oils and fats; $10,000 for investigating the possibilities of utilizing sweet-potato culls for the production of starch and conversion products; $10,000 for the development of new insecticides and fungicides; $10,000 for enlargement of research work on the causes and methods of control of farm fires; $5,000 for inaugurating studies of new processes and equipment for the production of naval stores, in cooperation with producers and the Forest Service, as well as a study of the adaptability of naval stores for various uses; $5,000 for expanding the work necessary to properly coordinate the chemical investigation of soils with the classification and mapping of soil types; $6,060 for investigation of methods of producing nitrogen fertilizer; $5,000 for a study of the production of phosphoric acid in a more desirable form than acid phosphates, and for potash investigations; $6,000 for bringing up to date the soil-survey map drafting work; $9,485 for studying the causes and developing methods for remedying destructive soil erosion; $4,650 for further crop experiments with air-derived nitrogen and other concentrated fertilizers; $2,350 for soil fertility and fertilizer studies on sugar-cane soils in Louisiana, Florida and other southern states, and $3,360 for additional editorial assistance and other general administrative work.

Bureau of Biological Survey, $1,078,500, which includes

increases of $1,480 to provide for additional clerical assistance in the general administrative work of the bureau; $2,500 for laboratory and field work on the perfection of rodent and predatory animal poisons; $6,000 for extension of the campaign for the destruction of injurious rodents; $10,000 for predatory animal control operations; $3,500 for researches on the food habits of water-fowl; $8,000 for extending the study of food habits, diseases and parasites of game animals, fur-bearing and predatory animals; $5,000 for the employment of additional game wardens, and $14,000 for administrative expenses in connection with the acquisition of land for the upper Mississippi River wild-life and fish refuge. There is an apparent decrease of $3,000 in the item for maintenance of mammal and bird reservations, but, due to the release of $18,000 provided in 1928 for fencing on the Wind Cave Game Preserve in South Dakota, there is actually $15,000 additional available for other work, as follows: $600 for minor construction work on the Big Lake Bird Reservation, Arkansas; $3,000 for work incident to the disposal of surplus animals in big-game preserves; $7,230 for the construction of various buildings and shelters and for necessary implements at big-game preserves; $1,000 for water development work on the Wind Cave Game Preserve; $900 for fencing at Sully's Hill Game Preserve, North Dakota, and $2,270 for care and maintenance of lands donated to the government by the Izaak Walton League as an addition to the winter elk refuge in Wyoming. A decrease of $4,000 is made in the fund for the purchase of land for the upper Mississippi River wild-life and fish refuge, the balances from prior appropriations being sufficient, under present purchase limitations, to take care of payments under contractual obligations during the fiscal year 1929.

THE GIANNINI FOUNDATION OF THE UNIVERSITY OF CALIFORNIA

FORMAL tender of a gift of $1,500,000, to be devoted to the study of agricultural economics, has been made to the regents of the University of California by Bancitaly Corporation, "in tribute to A. P. Giannini, of San Francisco, and to be named after him." As already recorded in SCIENCE, one third of the gift is to be used for the construction of a building for the College of Agriculture, to house the works of the Giannini Foundation, and $1,000,000 to be used as an endowment for the foundation.

In making the announcement, President W. W. Campbell, of the University of California, said in part:

As a result of Mr. Giannini's feeling, expressed to me some months ago, that he wanted to do something for the agriculturists of the state, that it is the very opposite of his philosophy of life that a man be rich at the time of his death and that he wanted to do something through the University of California for the farmers of California, conferences have been held since that time getting these ideas clarified; and Mr. Giannini has decided to extend to the regents of the University of California a gift of a million and a half dollars to establish and support a foundation of agricultural economics. Of course I shall recommend that it be designated as the Giannini Foundation of Agricultural Economics, although neither Mr. Giannini nor any of his friends have made any such suggestion.

My recommendation that we complete the agricultural college group of buildings now consisting of Agricultural Hall and Hilgard Hall by the construction of a counterpart of Hilgard Hall, the three buildings to enclose the agricultural quadrangle on as many sides, part of the building to accommodate the activity in agricultural economics, met his approval. This will call for approximately half a million dollars.

The activities of the foundation are to be embraced by the great field of agricultural economics, and relate to such subjects as: (*a*) the economic consideration of increased production, which results from improved seed grains, improved nursery stock, improved livestock, improved methods of farming, all these brought about largely through researches conducted by colleges of agriculture, and from the use of improved farm machinery; (*b*) the economic consequences of overproduction and underproduction arising from unusually favorable seasons or unusually unfavorable seasons as to weather and other conditions in the nations producing the agricultural product concerned, such as grains, cotton, etc.; (*c*) relations between conditions existing in the farming industry and the general economic conditions prevailing in the nation and internationally; (*d*) the methods and problems of disposing of farm products in the markets of the world on terms or conditions giving the maximum degree of satisfaction to the growers; (*e*) the economic questions which concern the individual farmer and the members of his family, and affect their living conditions, and so on.

It may be assumed that the Giannini Foundation of Agricultural Economics will be privileged to produce results of enormous value to the agricultural industry in California, not only in the years and decades immediately ahead but as a continuing foundation in perpetuity.

The offer of the gift was accompanied by a check for $25,000; this is to be followed by another for $475,000 within two months, and the remaining $1,000,000 to be made available as it is needed.

PRESENTATION OF THE CHARLES P. DALY GOLD MEDAL TO PROFESSOR ALOIS MUSIL

ON the evening of February 21, at a meeting of the American Geographical Society of New York, the Charles P. Daly gold medal of the society was presented to Professor Alois Musil, of Charles University, Prague, in recognition of a lifetime devoted to explorations in northern Arabia and Mesopotamia and to historical researches relating to this part of the world. After the ceremony, Professor Musil delivered a lecture entitled "Desert Life in Northern Arabia." We have received from the American Geographical