

A. W. Galston of California Institute of Technology will undertake a program on the light-controlled growth reactions in plants on an \$11,000, two-year grant.

Two systematic biological studies will be undertaken. One, on weevils of the western U. S., will be done at Brigham Young University by V. M. Tanner under a \$2400, one-year grant. The other is on the freshwater algae of Alaska and will be done by H. Croasdale of Dartmouth under a one-year, \$2500 grant.

### Pear Waste Now Paying

A four-year development program by an industry-government research team at the Western Regional Research Laboratory has resulted in a technically successful solution to one of the fruit waste processing problems of the West. The waste, a product of pear canneries, has resisted conventional disposal methods because the pectin content made the juice viscous and difficult to filter. Furthermore, much of the solids content is not fibrous but composed of stone cells. As a consequence, pear flesh is too weak structurally to withstand ordinary pressing operations.

As finally developed, the process is continuous. Its essentials are: (1) Lime is added to ground waste at 70° to 100° F. to adjust the pH to 8.5. The naturally occurring enzyme, pectinesterase, is activated by this treatment, deesterifying the pectin. The result is a highly hydrated calcium pectinate gel, which occludes solid materials as it precipitates. (2) As further deesterification

occurs, the calcium pectinate gel is converted to a calcium pectate gel that readily synerizes. Syneresis is aided by gently breaking up the gel into 1/8 inch chunks in a trough fitted with a rotating shaft containing 320 paddle blades. Additional lime aids the subsequent filtration step. (3) Juice is pressed from the mixture in a squeeze-press, the press cake is shredded and then dried, and the juice evaporated to molasses.

The ultimate economic promise of the process is still clouded. The first commercial installation, put into operation by Pacific Biochemical Co. in the 1952 season, is located in the San Jose region where about one third of the U. S. pear pack is produced. The pear waste in this region amounts to about 50,000 tons annually. The treatment of this waste would yield approximately 8000 tons of molasses of 42% sugar content, and 4000 tons of dried pulp. Both products are of economic value for livestock feed. However, the processing season is only 50 to 70 days in extent, necessitating a plant design whose daily capacity is about six times that which would be required if a year-round operation were possible. Operators of the commercial plant have compensated for this handicap by using the facilities to extract chlorophyll from other agricultural sources in the period when the pear canneries are not in operation.

### Spraying Citrus Leaf with Urea Promising Method of Application

Leaf spraying with urea solutions is a method of citrus grove fertilization cur-

rently under study at the University of California's Citrus Experiment Station. Horticulturist W. W. Jones, who is directing the experiments, claims that the new method is more economical than traditional soil treatment. Results of recent experiments on orange trees indicated greater yields from this method of supplying nitrogen than those obtained with the usual soil treatment.

Dr. Jones has warned against indiscriminate use of the spray, for strong solutions of urea can burn the leaves of the tree. Citrus growers in California have shown keen interest in the work.

### People

#### Romeo Short to Head Agriculture's Foreign Relations

Romeo E. Short, the recently appointed director of the Foreign Agricultural Service of the USDA has now been appointed chairman of the U. S. FAO interagency committee. Mr. Short thus becomes the central figure in the international relations of American agriculture. The committee which he now heads was created in 1946 to facilitate coordination between the Secretary of Agriculture and the UN Food and Agriculture Organization. The interagency committee is composed of representatives of the Departments of State, Treasury, Commerce, and Interior. The U. S. has been an active member of the FAO since its creation, contributing about \$1.5 million annually to the budget of that organization.

Mr. Short was formerly a vice president of the American Farm Bureau Federation.

Howard J. Shaughnessey, director of Illinois State Public Health Laboratories, will receive the sixth annual award of the Society of Illinois Bacteriologists. The award is to be presented at the society's May 16 meeting in the Edgewater Beach Hotel in Chicago.

N. H. Marsh and F. W. Mitchell, Jr., have been appointed chief chemist and chief analyst, respectively, of the nitrogen chemicals plant now under construction by American Cyanamid at New Orleans. Dr. Marsh has been working as coordinator of a special project at the company's Stamford research laboratories and Dr. Mitchell came to the company from the research laboratories of General Aniline & Film at Easton, Pa.

Edward P. Stamm, logging manager for Crown Zellerbach Corp., has been promoted to vice president of the company. He will be in charge of the company's timber, logging, and forestry operations in the U. S. His headquarters will remain in Portland, Ore.

Gel conditioning troughs of 600-ton-per-day pear waste plant, operating on the 1952 crop. The installation was built and is operated by Pacific Biochemical Co. from design developed by Western Regional Research Laboratory

