

University of California's Davis Campus. Says Gordie C. Hanna cautiously, "If two selections we now have prove on further testing to have the firm flesh of Pearson (currently the popular type with California growers) but without the large core of Pearson, we may have a variety to release in two or three more years."

Fusarium and *Verticillium* wilts have plagued tomato growers in many parts of the U. S. Workers in Wisconsin, Utah, Missouri, Connecticut, and other states have tackled the problem off and on for a number of years in addition to those at UC.

Dollarwise, it is difficult to pin down the cost of the diseases. Yield reductions in California, where half of the nation's crop is grown, run as high as 50% because of *Fusarium* with 20% for *Verticillium*. While this may reduce farmer income, there is the anomalous possibility yield will result in a sufficiently higher price to offset or even exceed the income from a "normal" crop. From the consumer point of view, however, there is only one result—a higher price.

It may be a blow to the pride of the pesticide chemist, but to date there are no successful (and economical) chemical control methods. The fungi infect the soil and enter the plant's system through its roots, soon killing it. Soil fumigation can be successful, but it is much too costly a procedure to be used on a crop like tomatoes. Some growers have used chemicals such as chloropicrin to fumigate their seed beds, but then only a relatively small area is involved and the cost can be justified. Where the field is infested—and such infestation is on the increase in California—the grower has two routes open to him—hope or move to another field.

This does not mean that all hope for chemical control has been abandoned. On the contrary, workers at Connecticut Agricultural Experiment Station, for instance, have made promising progress. Their approach has been to develop systemic fungicides which will enter the plant system and kill the fungi there. Pending a successful systemic, however, breeding resistance into the tomato, the approach taken by Hanna, seems to be the most promising line of attack.

Breeding *Fusarium* wilt resistance started at Davis in 1940. At that time, a wild red current tomato resistant to *Fusarium* was crossed with Santa Clara, the leading commercial variety then in use in California. While this gave a resistant strain, the fruit was small and backcrossing with Santa Clara to gain fruit size was necessary. After three backcrosses, a fruit comparable to Santa Clara had been developed.

By the time these strains were ready

for distribution in 1945, however, a type known as Pearson had become popular with California growers because of its smaller vine (consequently easier to harvest). Small vines may have made Pearson the growers' favorite, but the large core was not to the liking of processors, requiring more processing labor and resulting in higher wastes. So Dr. Hanna had to start all over to develop a *Fusarium* resistant Pearson without a large core.

This task was more time consuming than discouraging, however, since sources of resistance were available. By 1952, Hanna had a number of small core strains resistant to both *Verticillium* and *Fusarium*. Some of them are equal to or superior to Pearson in such qualities as yield, earliness, fruit size, and color. But all, with two exceptions, have softer flesh than Pearson and therefore do not carry as well. An additional disadvantage is the fact that in all of them a high percentage of stems remain attached to the fruit at harvest, a situation not to the liking of processors.

"Soft fruit and adhering stems present the real difficulties to overcome," Dr. Hanna says, as work continues at Davis.

People

Dairy Research Labs Honors Five Scientists

Five members of the staff of the National Dairy Research Laboratories, Oakdale, Long Island, were honored earlier this month by their associates. **L. B. Hitchcock**, president of the laboratories, presided over the function and the laboratory's vice president, **A. H. Johnson**, presented the awards.

E. H. Freund and **G. H. Haugaard** were awarded fellowships to give them greater freedom of action in choosing their fields of investigation. Dr. Freund has worked on synthetic fibers, cellulose acetate films, plastics, emulsifiers, antioxidants, and lactose derivatives. Dr. Haugaard's work has been in the amino acids, carbohydrates, the glass electrode, and chromatography. He is probably best known for his work on the identification of protein-bound sugars.

E. G. Stimpson and **Harold Young** shared the National Dairy Research Laboratories' Achievement Award for their research in the application of enzymology to human and animal nutrition.

H. G. Harding was elected to the rank of senior scientist for his work on detergents and sanitizers.

Charles H. Fisher, director of the Southern Regional Research Laboratory was awarded an honorary doctor of science degree by Tulane University for his accomplishments as a teacher,

research chemist, and research administrator. Dr. Fisher is a member of the AG AND FOOD Advisory Board.



Laurence B. Hitchcock has resigned his position as president of National Dairy Research Laboratories. He has opened a consulting practice with offices in the Chemists Building,

50 E. 41st St., New York City. Dr. Hitchcock is a member of the Advisory Board of the JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY.

Edward T. Oleskie will become assistant extension specialist in dairy husbandry at the college of agriculture, Rutgers University, July 1. He has been teaching at the college for the past six months.

D. M. Doty has become assistant director in administrative charge of the analytical and physical and organic chemistry divisions and the analytical service laboratory of the American Meat Institute Foundation. Also appointed assistant directors are **C. F. Niven, Jr.**, and **B. S. Schweigert**. Dr. Niven will be in charge of the bacteriology, home economics, and food technology divisions. Dr. Schweigert will be in charge of the biochemistry and nutrition and histology divisions and in charge of research on hides and animal feeds.

Ernest Hart, executive vice president of the chemical division of Food Machinery & Chemical Corp., has received an honorary doctor of agriculture degree from Michigan State College.

Herbert N. Frank has been named manager of the new products development department of General Foods. Paul Elliott-Smith becomes assistant manager of the same department. Mr. Frank was formerly manager of staff operations for the sales division.



Harry B. McClure becomes executive vice president of the Carbide & Carbon Chemicals Division of Union Carbide. He has been vice president since 1944, having

joined Carbide in 1928 as a research fellow at Mellon Institute.

Sidney M. Cantor has resigned his position as director of research for American Sugar Refining Co. to open a consulting practice. His offices will be located at 1717 Spruce St., Philadelphia 3, Pa.

P. A. Wells, director of the USDA's Eastern Regional Research Laboratory, received an honorary doctor of science from the Philadelphia College of Pharmacy and Science. Also honored with a degree was **Selman A. Waksman** of Rutgers, 1952 Nobel Prize winner.

C. W. Cook, associate professor of range management, and **L. E. Harris** professor of animal husbandry and chairman of the Institute of Nutrition at the Utah Agricultural Experiment Station,

are winners of the biennial Hoblitzelle National Award in Agricultural Sciences. Each received a gold medal and shared the \$5000 award. They were selected for cooperating on a project that provided a method for measuring the nutritional values of range forage and predicting nutritional deficiencies.

Ordway Starnes will become assistant director of the New Jersey Agricultural Experiment Station on Sept. 1. He has been the station's extension specialist in

entomology. On July 1, **Van Wie Ingham**, assistant to the dean and director of the Rutgers University college of agriculture, will take over as executive secretary of the college of agriculture and the experiment station. **Westervelt Griffin**, formerly assistant to the director of resident instruction, has been appointed assistant dean of the college of agriculture. Mr. Griffin will have charge of both the 4-year and short courses in agriculture.

IFT Awards Appert Medal to Victor Conquest of Armour & Co.



Appert Medal winner, Victor Conquest, at his desk at Armour & Co.

AWARD of the 1953 Nicholas Appert Medal of the Institute of Food Technologists to Victor Conquest of Armour and Co. pays tribute to a notable career heavily sprinkled with accomplishments in food processing and by-product research.

Conquest himself is inclined to give most of the credit to those who follow the leadership he provides as Armour's vice president for research and development. To hear Conquest tell it, the research staff of more than 500—a big jump from the tiny group which comprised the research department first formed by Conquest in 1929—does all the work; he merely “protects them and makes certain that they have a budget which permits them to progress with their projects.”

It is apparent, however, that Vic Conquest has more than a mere conversational acquaintance with the many research projects which come under his

jurisdiction. He personally directed research on dried eggs, for instance, and had himself developed a process for their manufacture as early as 1931. When World War II came along, Conquest's early leadership in this field paid off in making large quantities of dried eggs available to the armed services with a minimum of lost time and effort.

After a 30-year career in food processing research, Conquest still considers it an interesting and challenging business. Science came late to the food industry, Conquest acknowledges, and there is much left to be done. Despite the fact that processors are turning out the finest foods in history, Conquest believes there is still room for improvement in getting more nutrition into each pound of processed meat or each can of factory-packed vegetables. The improvement need not depend upon the addition of special components such as synthetic vitamins or amino acids, although these practices are

not ruled out as future possibilities. (The intelligent use of additives—vitamins, minerals, and other special dietary requirements—has already made dog food the “most nutritious food we make,” says Conquest.) Simply by concentrating on preventing losses of nutritive values during processing and marketing, natural food products can be brought to the consumer in a more nourishing form.

As one means of helping to prevent losses in food value, Conquest sees an increased trend toward prepackaging of food products for ultimate consumer use. As part of this trend, especially in the meat packing industry, Conquest visualizes the development of more canned foods and more factory-processed products (such as sausages). For the latter, research still must yield satisfactory methods of stabilizing products against attack by bacteria or light, but these problems, Conquest says, will be solved. Cold sterilization techniques have already been partially proved, although economic drawbacks and, in some cases, the development of off-flavors still must be eliminated.

No “cloud-walker,” Vic Conquest sees no early demand for nonemergency use of “synthetic steaks” or “tableted meals.” As long as the food processing industry can depend on livestock for the economical conversion of grasses and grains into tasty protein products, he says, food researchers probably can best utilize their time in solving the more immediate problems of special diets for special applications. Having already worked out highly acceptable diets for babies, children, and the majority of adults, for example, research is now being focussed increasingly on geriatric foods for the expanding population of elderly people. In this, as in other projects it has undertaken, predicts Conquest, the food industry will continue to call on the skills of bacteriologists, chemists, biochemists, chemical engineers, mechanical engineers. Members of virtually every scientific discipline will have a hand in assuring the human race of a tailor-made food supply that is not only pleasing to the palate but is also designed for better living.