



**CAREFULLY CONTROLLED** greenhouse experiments allow the pathologist to study the influence of environmental factors on disease development.

seeking a profession in which intelligence, skill, ambition and dedication are required and which offers as rewards intellectual and personal fulfillment and the satisfaction of contributing to the well-being of mankind, should look further into the field of plant pathology.

For further information write to the Department of Plant Pathology, University of Arizona, Tucson, Arizona.

HIGH SCHOOL STUDENTS:

## Consider a Career in Plant Pathology

**George A. Gries**

Young people who crave the excitement and challenge of a career in science should consider the field of plant pathology, the study of the cause, nature and control of the diseases of plants.

Since recorded history began, man has been curious about the plants on which he depended for food, fiber and shelter. Particularly was his curiosity aroused when some "blight" or "rot" or "mildew" struck his crop and left famine in the land. Early in history these crop failures were blamed on the wrath of the gods, the sign of the moon, or the weather. Today we know that many of these, such as the Great Irish Famine of the 1840's, were caused by plant diseases.

### Disease Gets 10 Per Cent

In modern America, famine is unknown but each year the pests which cause plant diseases — bacteria, fungi, nematodes and viruses — take an annual toll of approximately 10 per cent of our potential crop yields and result in a direct loss of over \$3 billion to growers of vegetable, fruit, ornamental and field crops. Our freedom from disastrous famine stems in part from our better knowledge of plant diseases and how to control them, but the continual discovery of new diseases and the diligent search for better means of controlling the old, present almost daily challenges to be solved by the plant pathologist.

Unlike the medical doctor, the plant "doctor" is usually more concerned with

preventing disease than with curing the patient. The value of an individual plant is seldom sufficient to warrant the cost of its cure even if a cure were possible. Disease prevention is effected in many ways — by varying cultural practices, by the application of pesticides, and by the breeding of disease resistant varieties of plants.

### Thorough Training Needed

Just as a medical student must spend several years in pre-medicine, so the plant pathologist must spend considerable time in grounding himself in the basic sciences before beginning his specialization. Courses in plant science (anatomy, physiology, and genetics) and in chemistry (organic and biochemistry) are particularly necessary. For this reason the introductory course in Plant Pathology is normally delayed until the sophomore or junior year. With sound training, however, the plant pathologist with a bachelor's degree finds a variety of technical jobs open to him. Better jobs with more pay, of course, await the pathologist with advanced specialized training.

While plant pathology is basically a biological science, the student interested in chemistry, physics, and even mathematics will find a rewarding outlet for his interests. All of the modern tools of research, such as radioactive tracers, electron microscopy, chromatography and statistical techniques are used in research on plant diseases.

### It Warrants the Best

Any science-oriented boy or girl who is



**ABOVE, ISOLATION OF pathogens and the study of their growth in pure culture require sterile conditions.**

**MODERN INSTRUMENTS, such as this supercentrifuge in the photo below, are used in plant pathological research.**



Dr. Gries is head of the Department of Plant Pathology.